

# Appendix 1

## Spawning Potential Ratio and Yield per Recruit Analyses

### Acanthuridae - Surgeonfishes

#### Species: **Acanthurus blochii**

**Hawaiian Name:** Pualu

**Common Name:** Ringtail Surgeonfish

**Family:** Surgeonfishes

**Current Minimum Size Limit (FL):** NA

#### Life History Parameters

**L<sub>0</sub> (von Bertalanffy asymptotic size):** 338 mm FL

**K (von Bertalanffy growth parameter):** 0.25 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.38

**L<sub>m</sub> (Length at maturity):** 257 mm FL

**L<sub>m</sub> (Length at maturity):** 10 inches FL

**M (natural mortality rate):** 0.09 per year

**Longevity:** 35 years

**M/K:** 0.36

**L<sub>m</sub>/L<sub>0</sub>:** 0.76

#### Acanthurus blochii - SPR Values

Option	Minimum Size Limit		Fishing Pressure (F/M)		
	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	231	9.1	<b>0.40</b>	<b>0.23</b>	<b>0.11</b>
1 x L <sub>m</sub>	257	10.1	<b>0.45</b>	<b>0.28</b>	<b>0.16</b>
1.1 x L <sub>m</sub>	283	11.1	<b>0.53</b>	<b>0.39</b>	<b>0.28</b>
1.2 x L <sub>m</sub>	308	12.1	<b>0.65</b>	<b>0.53</b>	<b>0.45</b>

*Note:*

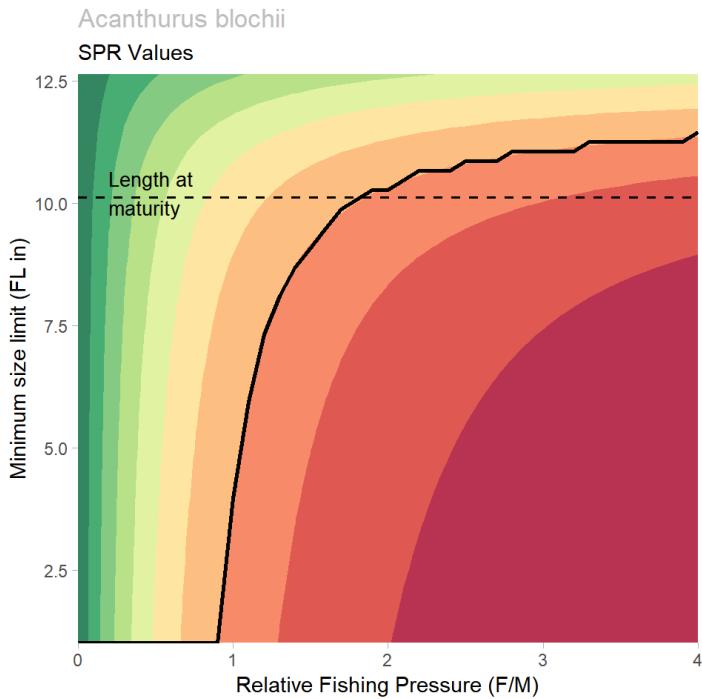
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

#### Acanthurus blochii - YPR Values

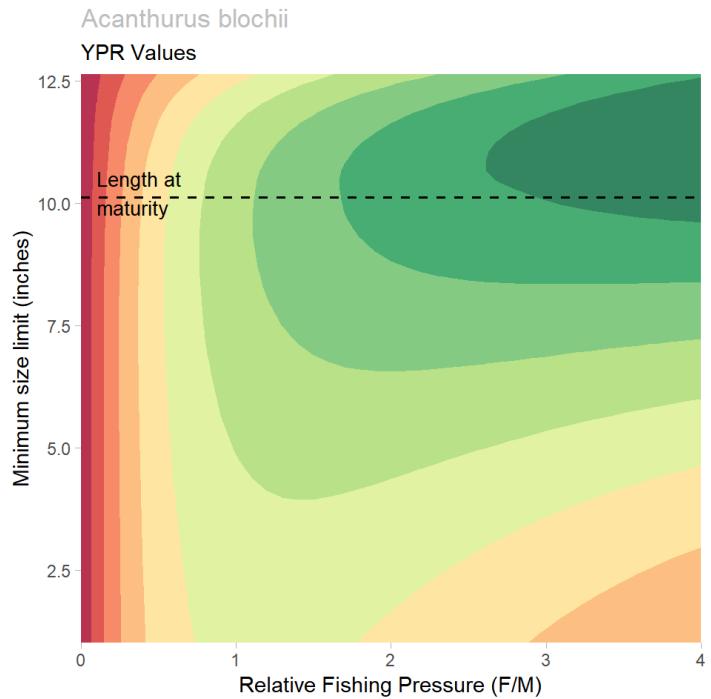
Option	Minimum Size Limit		Fishing Pressure (F/M)		
	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	231	9.1	<b>0.67</b>	<b>0.81</b>	<b>0.86</b>
1 x L <sub>m</sub>	257	10.1	<b>0.67</b>	<b>0.83</b>	<b>0.92</b>
1.1 x L <sub>m</sub>	283	11.1	<b>0.63</b>	<b>0.81</b>	<b>0.97</b>
1.2 x L <sub>m</sub>	308	12.1	<b>0.52</b>	<b>0.71</b>	<b>0.89</b>

*Note:*

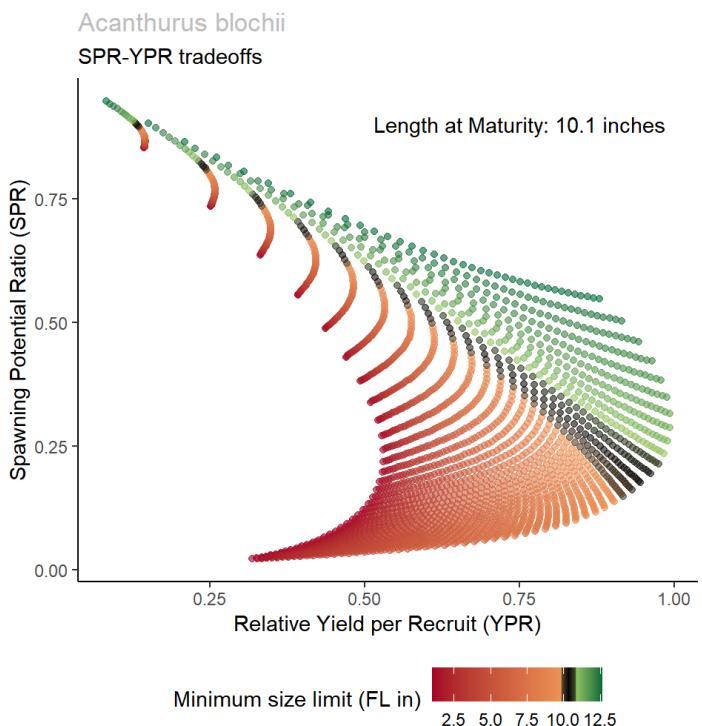
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



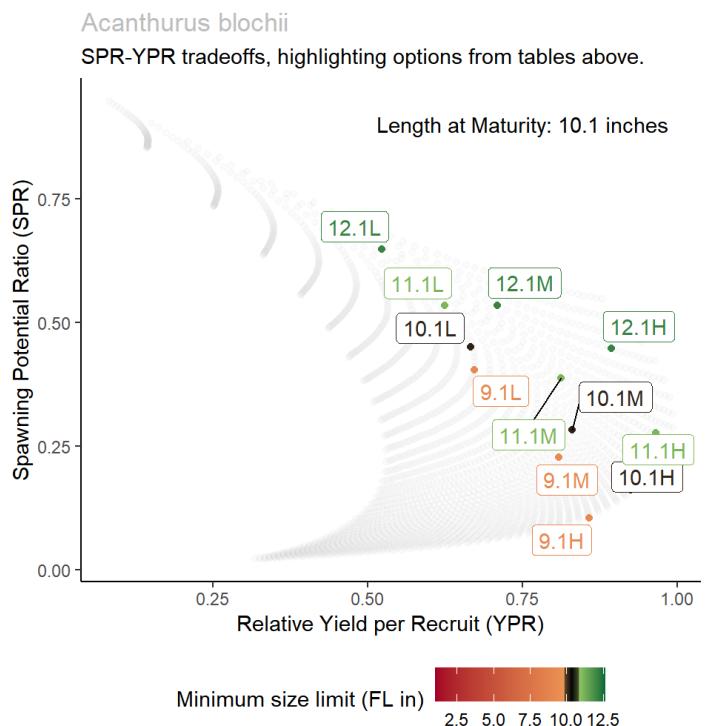
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: Acanthurus dussumieri

**Hawaiian Name:** Palani

**Common Name:** Eyestriped Surgeonfish

**Family:** Surgeonfishes

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>0</sub> (von Bertalanffy asymptotic size):** 371 mm FL

**K (von Bertalanffy growth parameter):** 0.296 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.29

**L<sub>m</sub> (Length at maturity):** 282 mm FL

**L<sub>m</sub> (Length at maturity):** 11 inches FL

**M (natural mortality rate):** 0.11 per year

**Longevity:** 28 years

**M/K:** 0.37

**L<sub>m</sub>/L<sub>0</sub>:** 0.76

### Acanthurus dussumieri - SPR Values

Option	mm	inches	Fishing Pressure (F/M)			
			Minimum Size Limit	Low	Med	High
0.9 x L <sub>m</sub>	254	10.0		<b>0.41</b>	<b>0.23</b>	<b>0.11</b>
1 x L <sub>m</sub>	282	11.1		<b>0.45</b>	<b>0.28</b>	<b>0.16</b>
1.1 x L <sub>m</sub>	310	12.2		<b>0.53</b>	<b>0.38</b>	<b>0.27</b>
1.2 x L <sub>m</sub>	338	13.3		<b>0.65</b>	<b>0.54</b>	<b>0.45</b>

*Note:*

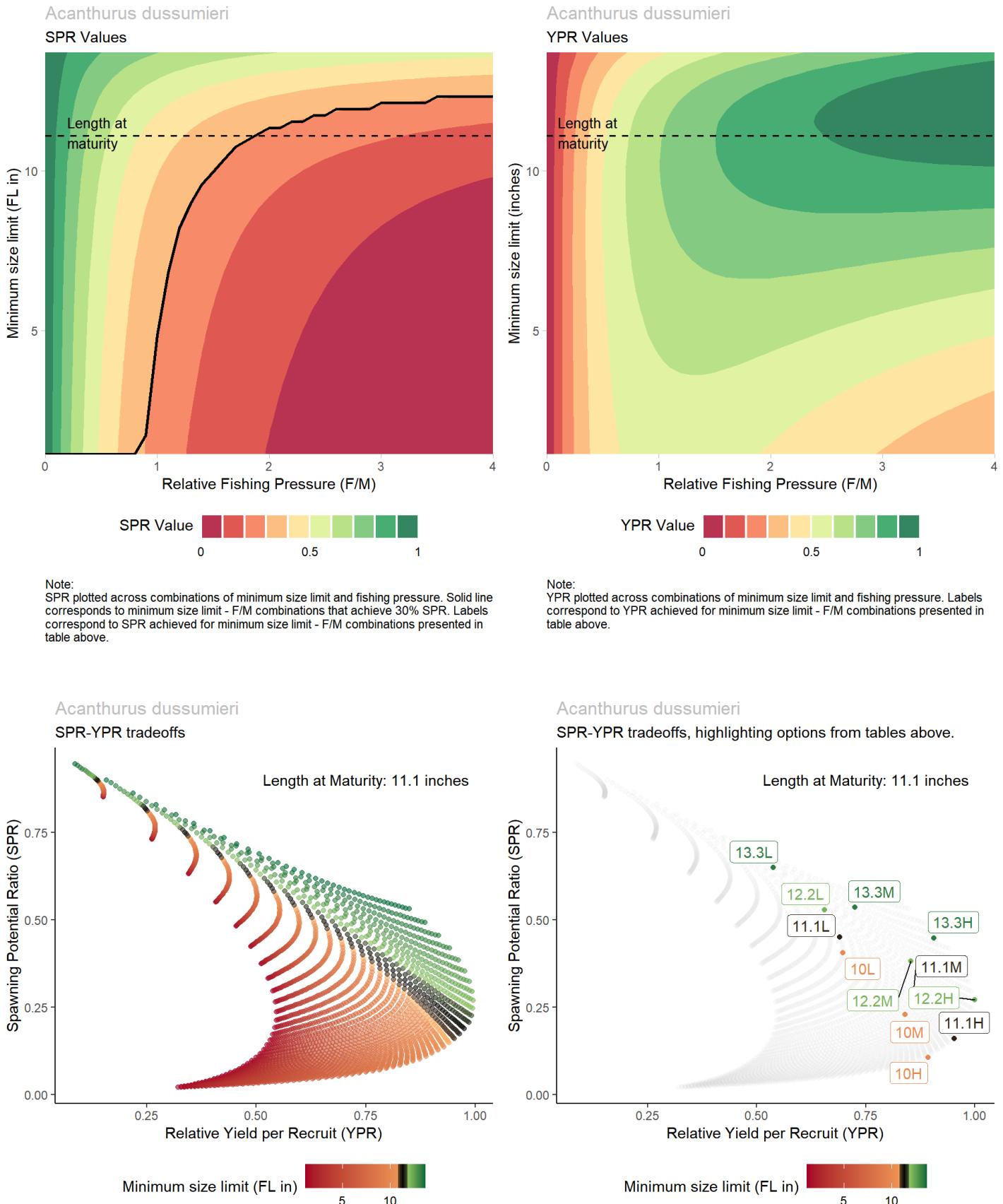
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Acanthurus dussumieri - YPR Values

Option	mm	inches	Fishing Pressure (F/M)			
			Minimum Size Limit	Low	Med	High
0.9 x L <sub>m</sub>	254	10.0		<b>0.70</b>	<b>0.84</b>	<b>0.89</b>
1 x L <sub>m</sub>	282	11.1		<b>0.69</b>	<b>0.86</b>	<b>0.95</b>
1.1 x L <sub>m</sub>	310	12.2		<b>0.66</b>	<b>0.85</b>	<b>1.00</b>
1.2 x L <sub>m</sub>	338	13.3		<b>0.54</b>	<b>0.72</b>	<b>0.91</b>

*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



## Species: **Acanthurus triostegus sandvicensis**

**Hawaiian Name:** Manini

**Common Name:** Convict Tang

**Family:** Surgeonfishes

**Current Minimum Size Limit (FL):** 5 inches

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 177 mm FL

**K (von Bertalanffy growth parameter):** 1.4308 per year

**t<sub>0</sub> (von Bertalanffy parameter):** 0.0511

**L<sub>m</sub> (Length at maturity):** 156 mm FL

**L<sub>m</sub> (Length at maturity):** 6 inches FL

**M (natural mortality rate):** 0.97 per year

**Longevity:** NA years

**M/K:** 0.68

**L<sub>m</sub>/L<sub>oo</sub>:** 0.88

### Acanthurus triostegus sandvicensis - SPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	140	5.5	<b>0.38</b>	<b>0.21</b>	<b>0.11</b>
1 x L <sub>m</sub>	156	6.1	<b>0.55</b>	<b>0.42</b>	<b>0.33</b>
Current size limit	127	5.0	<b>0.28</b>	<b>0.11</b>	<b>0.03</b>

*Note:*

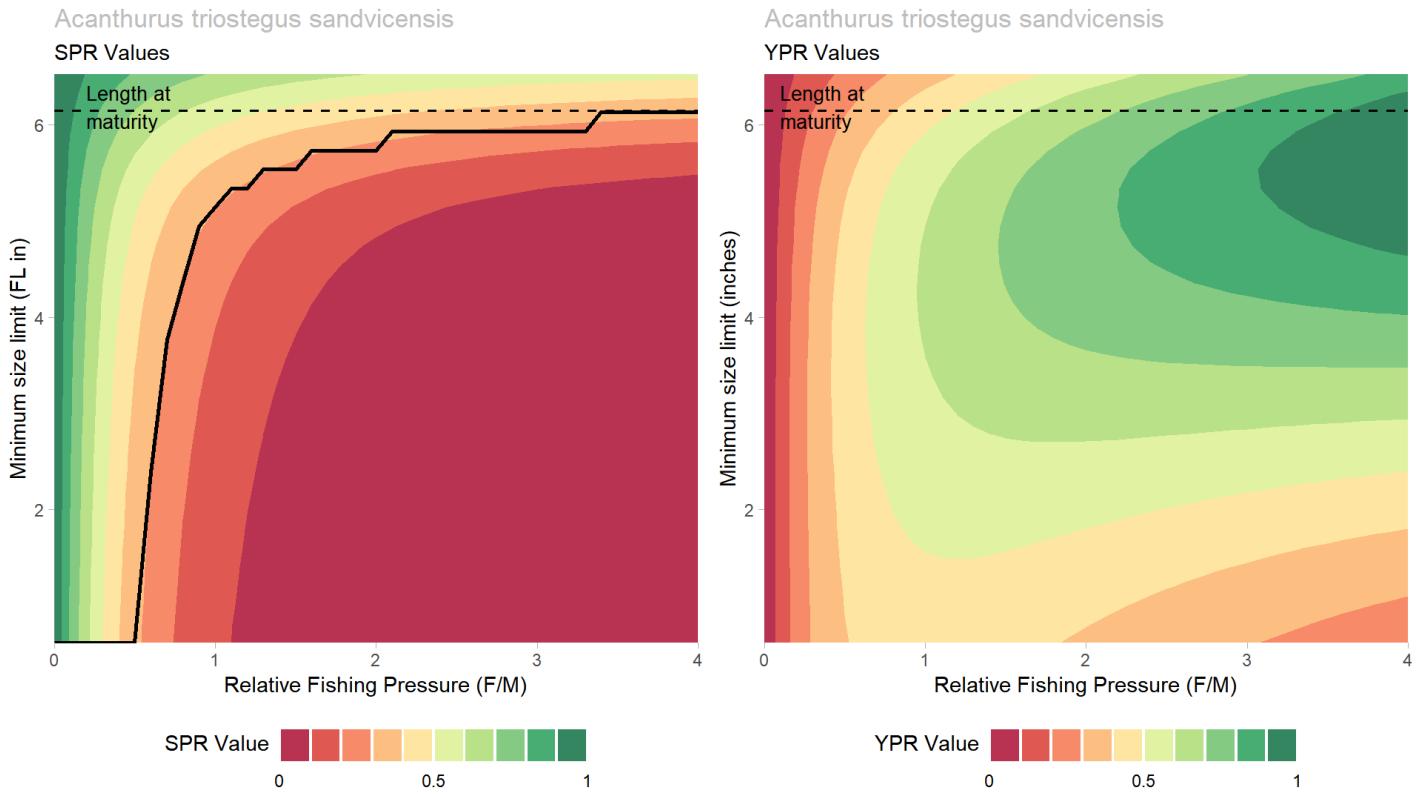
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Acanthurus triostegus sandvicensis - YPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	140	5.5	<b>0.56</b>	<b>0.76</b>	<b>1.00</b>
1 x L <sub>m</sub>	156	6.1	<b>0.46</b>	<b>0.67</b>	<b>0.95</b>
Current size limit	127	5.0	<b>0.59</b>	<b>0.76</b>	<b>0.91</b>

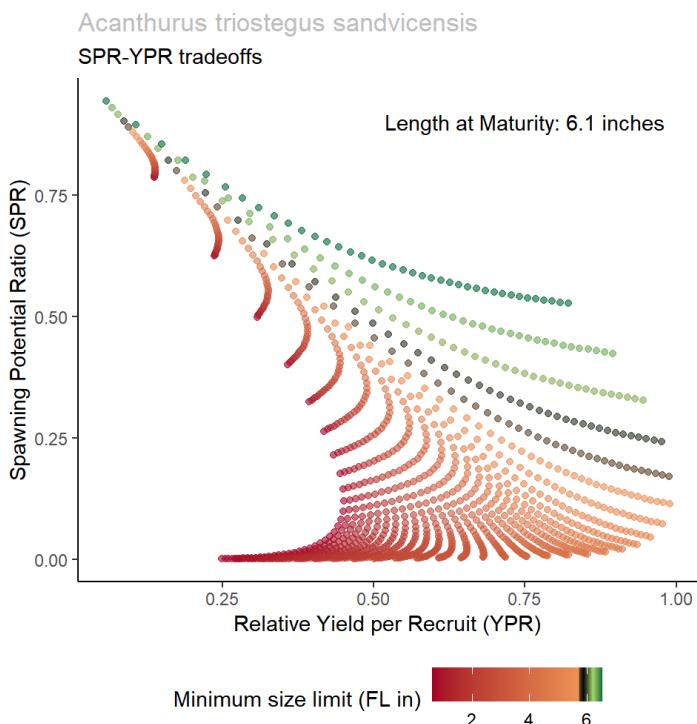
*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

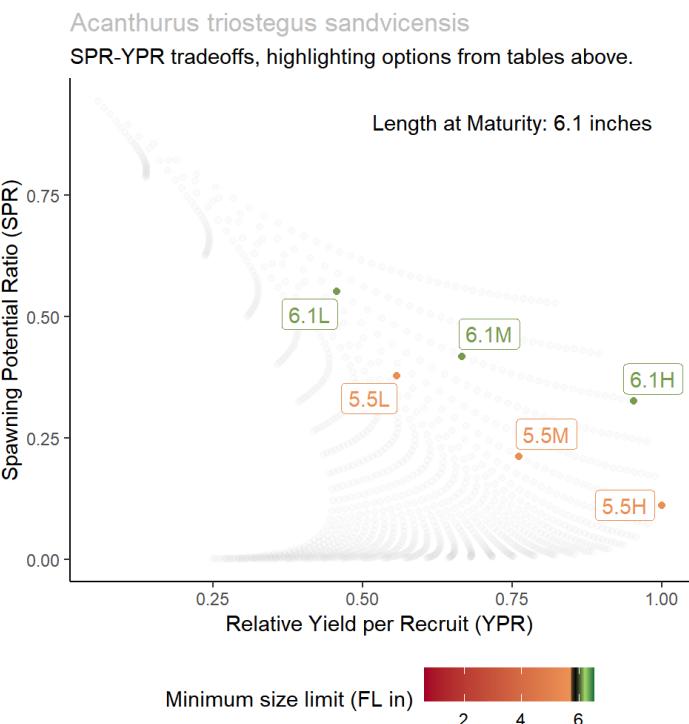


Note:  
 SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

Note:  
 YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
 All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
 All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: Acanthurus xanthopterus

**Hawaiian Name:** Pualu

**Common Name:** Yellowfin Surgeonfish

**Family:** Surgeonfishes

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 501 mm FL

**K (von Bertalanffy growth parameter):** 0.287 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.21

**L<sub>m</sub> (Length at maturity):** 431 mm FL

**L<sub>m</sub> (Length at maturity):** 17 inches FL

**M (natural mortality rate):** 0.09 per year

**Longevity:** 34 years

**M/K:** 0.31

**L<sub>m</sub>/L<sub>oo</sub>:** 0.86

### Acanthurus xanthopterus - SPR Values

Option	Minimum Size Limit		Fishing Pressure (F/M)		
	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	388	15.3	0.41	0.23	0.11
1 x L <sub>m</sub>	431	17.0	0.50	0.34	0.22
1.1 x L <sub>m</sub>	474	18.7	0.66	0.55	0.46

*Note:*

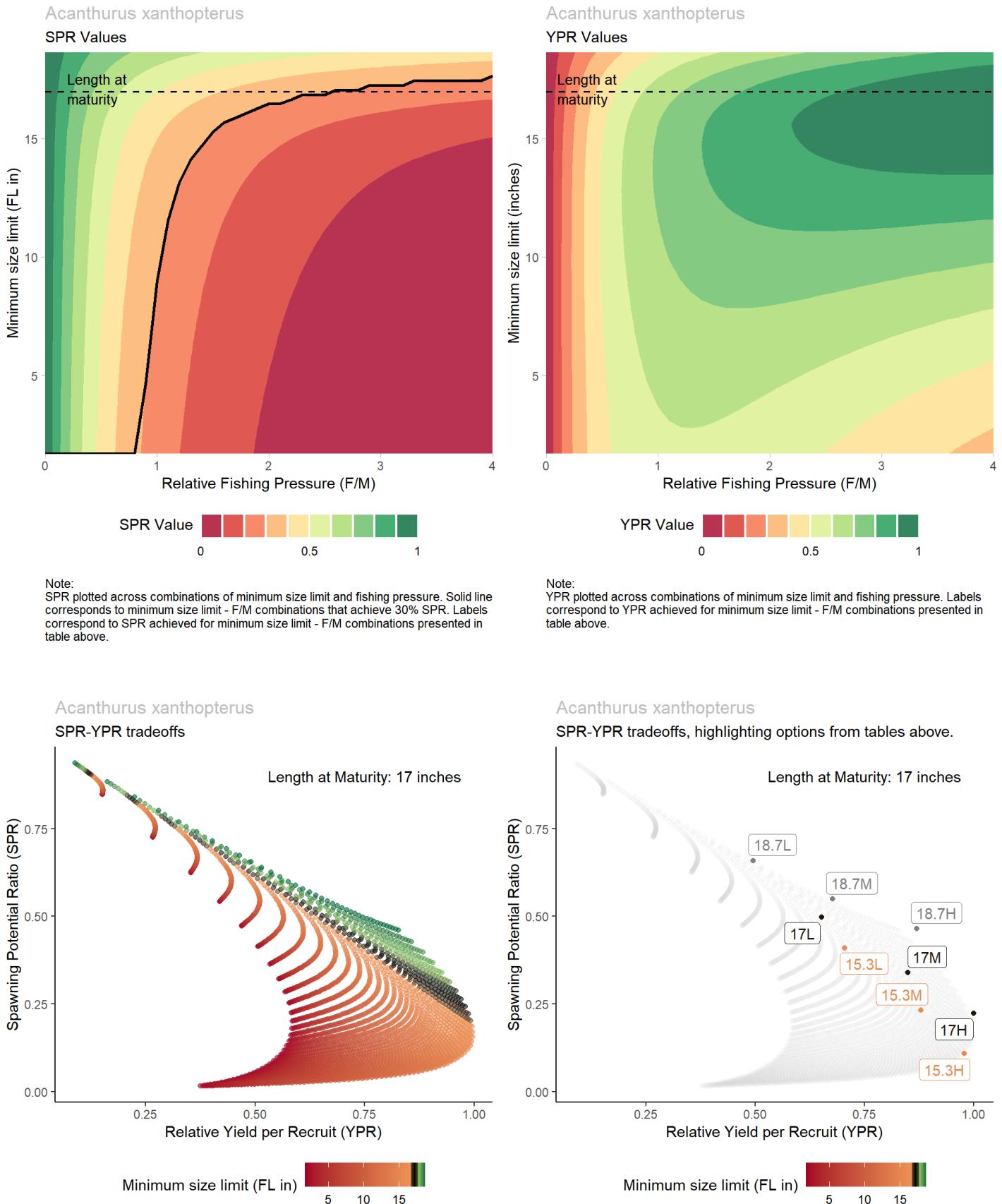
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Acanthurus xanthopterus - YPR Values

Option	Minimum Size Limit		Fishing Pressure (F/M)		
	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	388	15.3	0.70	0.88	0.98
1 x L <sub>m</sub>	431	17.0	0.65	0.85	1.00
1.1 x L <sub>m</sub>	474	18.7	0.49	0.68	0.87

*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



## Species: **Ctenochaetus strigosus**

**Hawaiian Name:** Kole

**Common Name:** Goldring Surgeonfish

**Family:** Surgeonfishes

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 178 mm FL

**K (von Bertalanffy growth parameter):** 0.423 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.51

**L<sub>m</sub> (Length at maturity):** 84 mm FL

**L<sub>m</sub> (Length at maturity):** 3 inches FL

**M (natural mortality rate):** 0.08 per year

**Longevity:** 39 years

**M/K:** 0.19

**L<sub>m</sub>/L<sub>oo</sub>:** 0.47

### Ctenochaetus strigosus - SPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	76	3.0	<b>0.41</b>	<b>0.24</b>	<b>0.11</b>
1 x L <sub>m</sub>	84	3.3	<b>0.42</b>	<b>0.25</b>	<b>0.12</b>
1.1 x L <sub>m</sub>	92	3.6	<b>0.43</b>	<b>0.25</b>	<b>0.12</b>
1.2 x L <sub>m</sub>	101	4.0	<b>0.44</b>	<b>0.26</b>	<b>0.14</b>
1.3 x L <sub>m</sub>	109	4.3	<b>0.45</b>	<b>0.28</b>	<b>0.15</b>
1.5 x L <sub>m</sub>	126	5.0	<b>0.47</b>	<b>0.31</b>	<b>0.18</b>
2 x L <sub>m</sub>	168	6.6	<b>0.72</b>	<b>0.62</b>	<b>0.54</b>

**Note:**

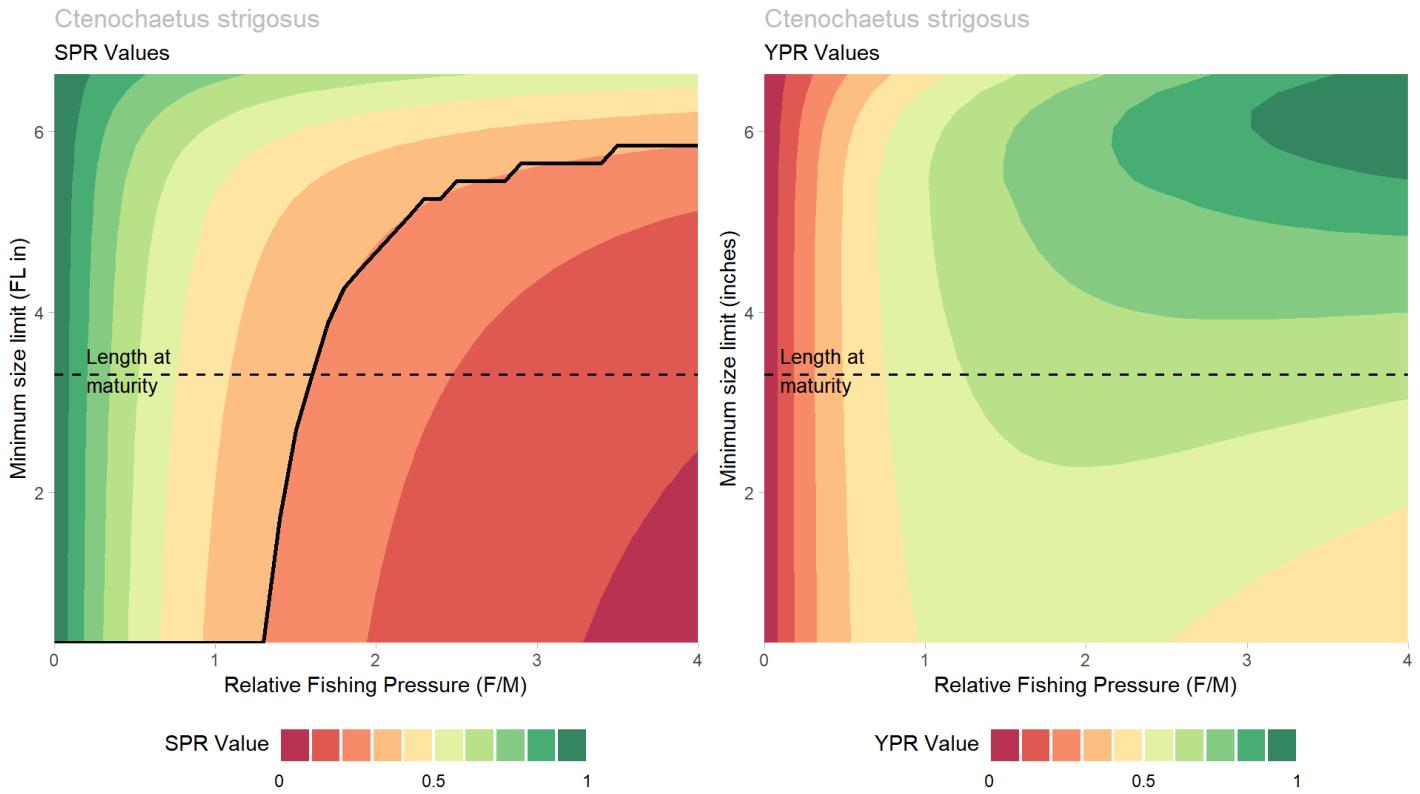
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Ctenochaetus strigosus - YPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	76	3.0	<b>0.55</b>	<b>0.63</b>	<b>0.59</b>
1 x L <sub>m</sub>	84	3.3	<b>0.56</b>	<b>0.65</b>	<b>0.63</b>
1.1 x L <sub>m</sub>	92	3.6	<b>0.57</b>	<b>0.66</b>	<b>0.65</b>
1.2 x L <sub>m</sub>	101	4.0	<b>0.57</b>	<b>0.68</b>	<b>0.69</b>
1.3 x L <sub>m</sub>	109	4.3	<b>0.58</b>	<b>0.70</b>	<b>0.73</b>
1.5 x L <sub>m</sub>	126	5.0	<b>0.59</b>	<b>0.74</b>	<b>0.81</b>
2 x L <sub>m</sub>	168	6.6	<b>0.46</b>	<b>0.65</b>	<b>0.87</b>

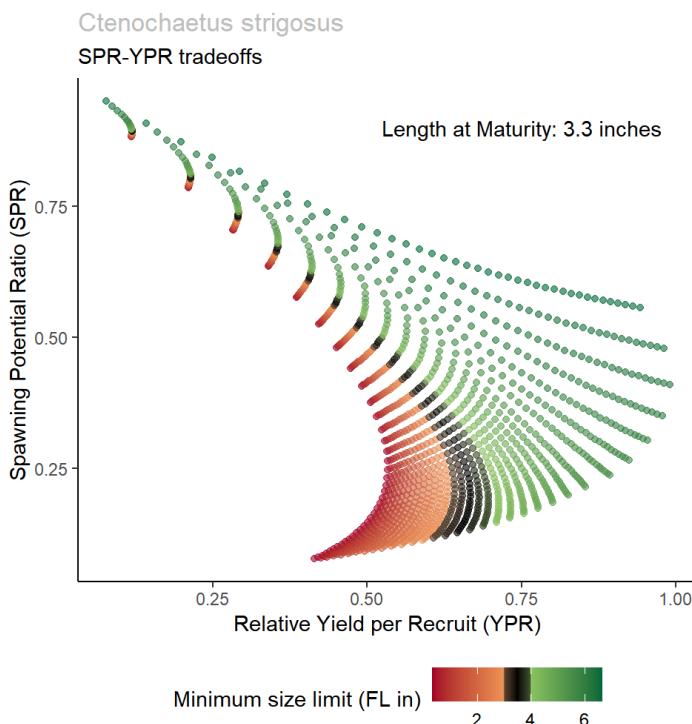
**Note:**

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

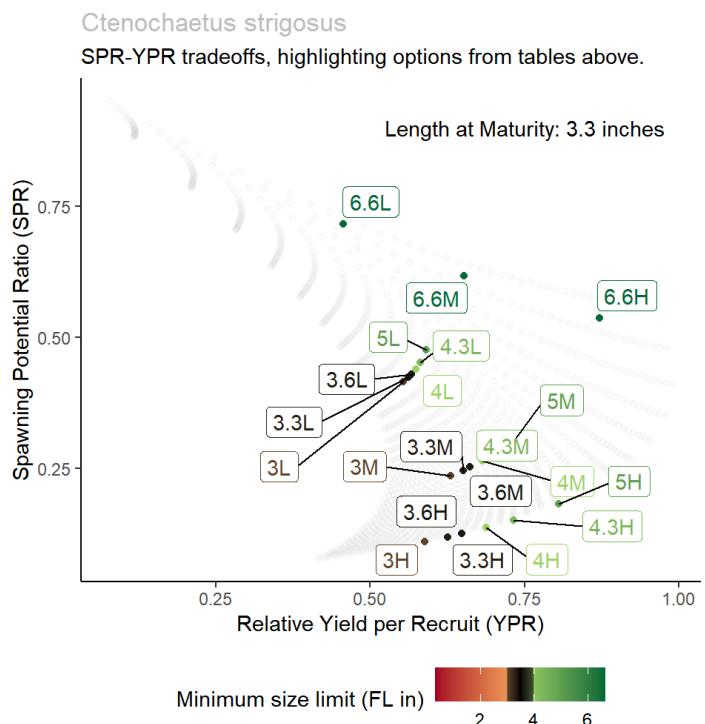


Note:  
 SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

Note:  
 YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
 All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
 All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: **Ctenochaetus strigosus** - female

**Hawaiian Name:** Kole

**Common Name:** Goldring Surgeonfish

**Family:** Surgeonfishes

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>00</sub> (von Bertalanffy asymptotic size):** 115 mm FL

**K (von Bertalanffy growth parameter):** 0.6553 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -1.2811

**L<sub>m</sub> (Length at maturity):** 84 mm FL

**L<sub>m</sub> (Length at maturity):** 3 inches FL

**M (natural mortality rate):** 0.18 per year

**Longevity:** 18 years

**M/K:** 0.27

**L<sub>m</sub>/L<sub>00</sub>:** 0.73

### Ctenochaetus strigosus - female - SPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	76	3.0	<b>0.43</b>	<b>0.26</b>	<b>0.13</b>
1 x L <sub>m</sub>	84	3.3	<b>0.47</b>	<b>0.31</b>	<b>0.18</b>
1.1 x L <sub>m</sub>	92	3.6	<b>0.51</b>	<b>0.36</b>	<b>0.24</b>
1.2 x L <sub>m</sub>	101	4.0	<b>0.61</b>	<b>0.49</b>	<b>0.39</b>

*Note:*

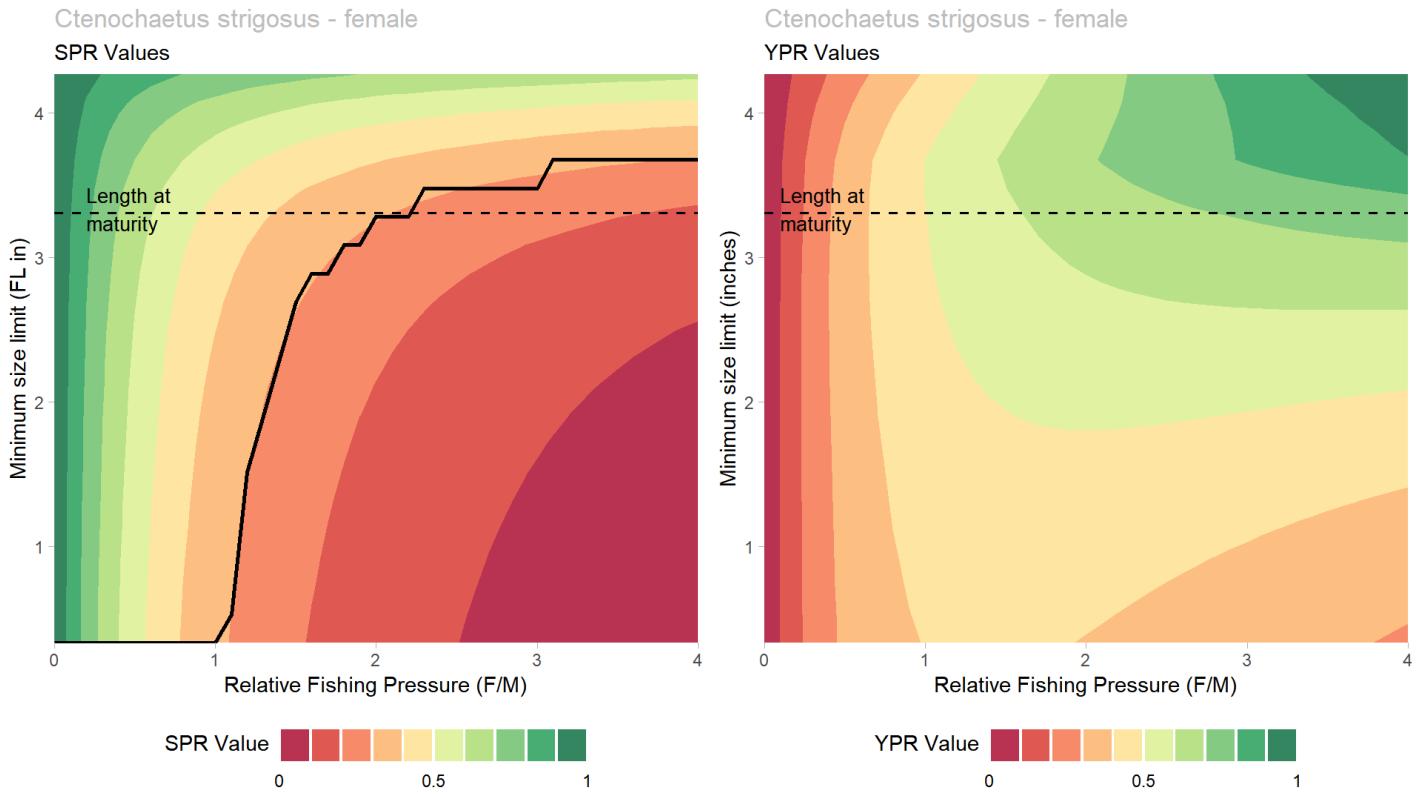
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Ctenochaetus strigosus - female - YPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	76	3.0	<b>0.49</b>	<b>0.60</b>	<b>0.66</b>
1 x L <sub>m</sub>	84	3.3	<b>0.50</b>	<b>0.64</b>	<b>0.75</b>
1.1 x L <sub>m</sub>	92	3.6	<b>0.49</b>	<b>0.66</b>	<b>0.80</b>
1.2 x L <sub>m</sub>	101	4.0	<b>0.48</b>	<b>0.69</b>	<b>0.97</b>

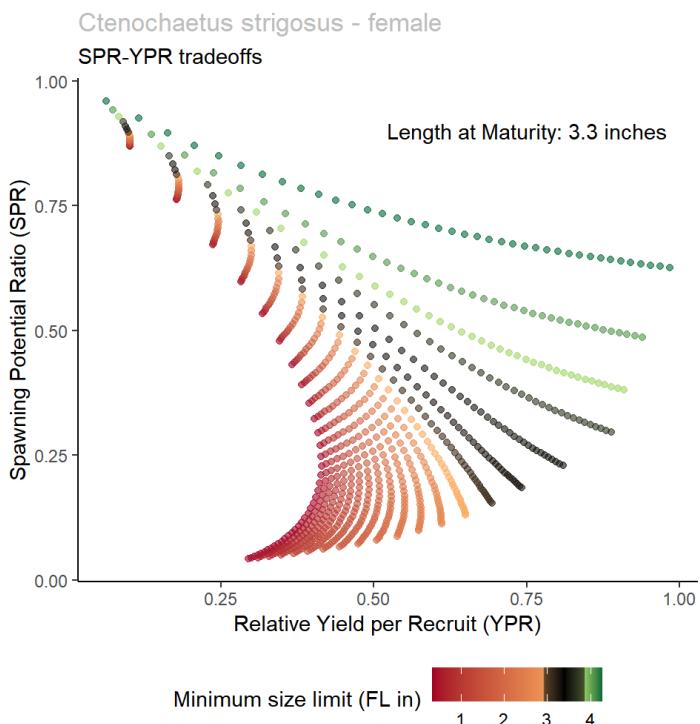
*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

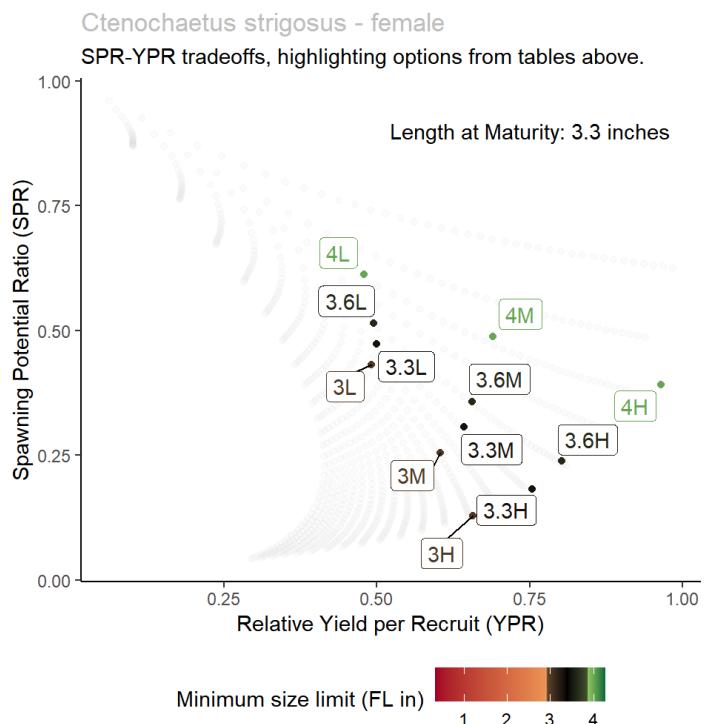


Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

# Species: **Ctenochaetus strigosus - male**

**Hawaiian Name:** Kole

**Common Name:** Goldring Surgeonfish

**Family:** Surgeonfishes

**Current Minimum Size Limit (FL):** NA

## Life History Parameters

**L<sub>0</sub> (von Bertalanffy asymptotic size):** 146 mm FL

**K (von Bertalanffy growth parameter):** 0.5099 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -1.0542

**L<sub>m</sub> (Length at maturity):** 100 mm FL

**L<sub>m</sub> (Length at maturity):** 4 inches FL

**M (natural mortality rate):** 0.18 per year

**Longevity:** 18 years

**M/K:** 0.35

**L<sub>m</sub>/L<sub>0</sub>:** 0.69

## Ctenochaetus strigosus - male - SPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	90	3.5	<b>0.41</b>	<b>0.23</b>	<b>0.11</b>
1 x L <sub>m</sub>	100	3.9	<b>0.44</b>	<b>0.27</b>	<b>0.15</b>
1.1 x L <sub>m</sub>	110	4.3	<b>0.48</b>	<b>0.33</b>	<b>0.21</b>
1.2 x L <sub>m</sub>	120	4.7	<b>0.55</b>	<b>0.41</b>	<b>0.31</b>
1.3 x L <sub>m</sub>	130	5.1	<b>0.65</b>	<b>0.54</b>	<b>0.45</b>

*Note:*

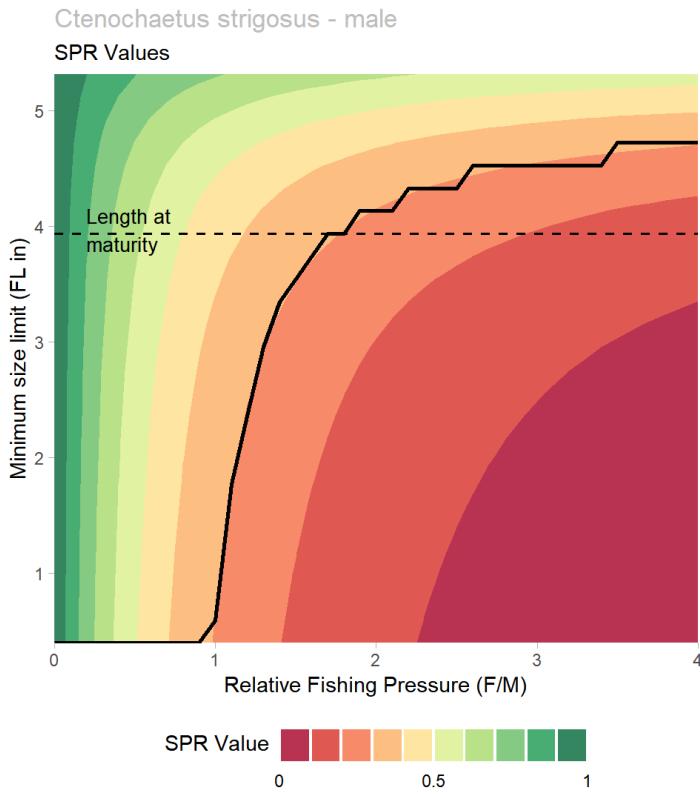
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

## Ctenochaetus strigosus - male - YPR Values

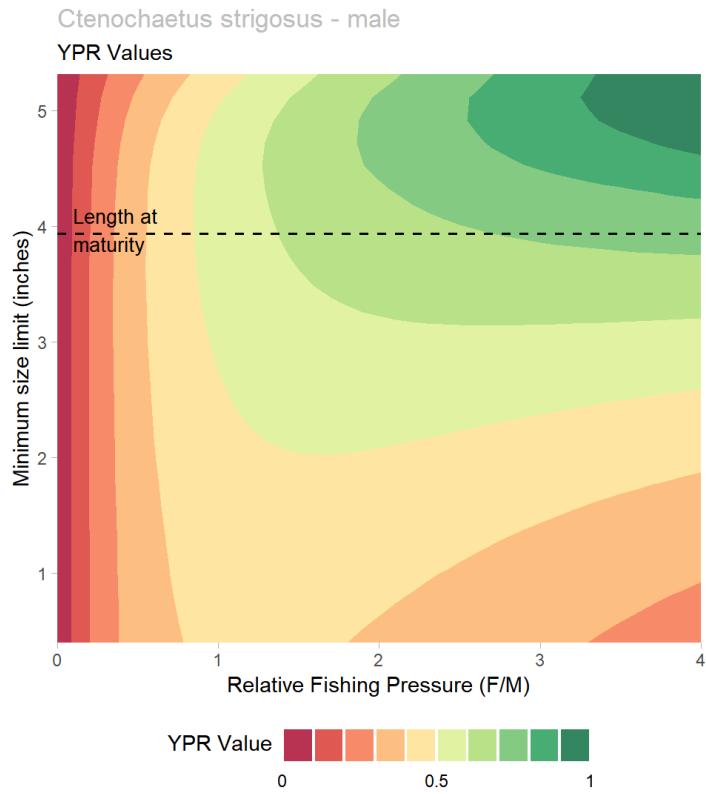
Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	90	3.5	<b>0.53</b>	<b>0.63</b>	<b>0.66</b>
1 x L <sub>m</sub>	100	3.9	<b>0.54</b>	<b>0.66</b>	<b>0.74</b>
1.1 x L <sub>m</sub>	110	4.3	<b>0.54</b>	<b>0.69</b>	<b>0.82</b>
1.2 x L <sub>m</sub>	120	4.7	<b>0.53</b>	<b>0.72</b>	<b>0.93</b>
1.3 x L <sub>m</sub>	130	5.1	<b>0.49</b>	<b>0.71</b>	<b>1.00</b>

*Note:*

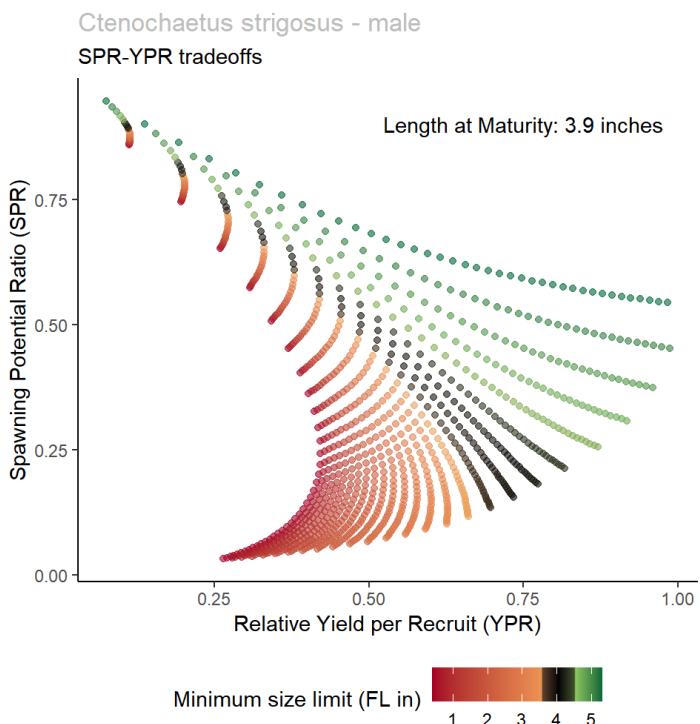
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



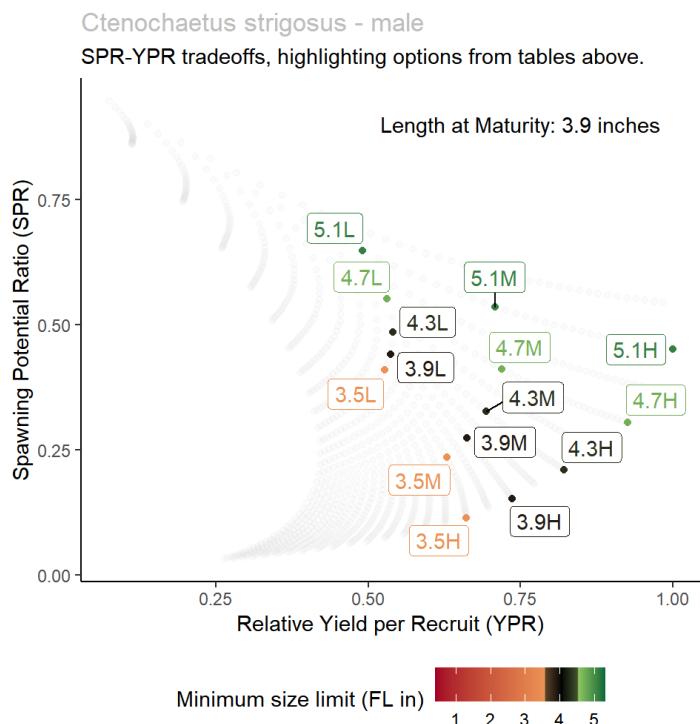
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: Naso brevirostris

**Hawaiian Name:** Kala Lolo

**Common Name:** Paletail Unicornfish

**Family:** Surgeonfishes

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 327 mm FL

**K (von Bertalanffy growth parameter):** 0.402 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.21

**L<sub>m</sub> (Length at maturity):** 269 mm FL

**L<sub>m</sub> (Length at maturity):** 11 inches FL

**M (natural mortality rate):** 0.13 per year

**Longevity:** 25 years

**M/K:** 0.32

**L<sub>m</sub>/L<sub>oo</sub>:** 0.82

### Naso brevirostris - SPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	242	9.5	<b>0.41</b>	<b>0.23</b>	<b>0.11</b>
1 x L <sub>m</sub>	269	10.6	<b>0.48</b>	<b>0.32</b>	<b>0.20</b>
1.1 x L <sub>m</sub>	296	11.7	<b>0.59</b>	<b>0.46</b>	<b>0.36</b>
Current size limit	0	0.0	<b>0.26</b>	<b>0.10</b>	<b>0.02</b>

*Note:*

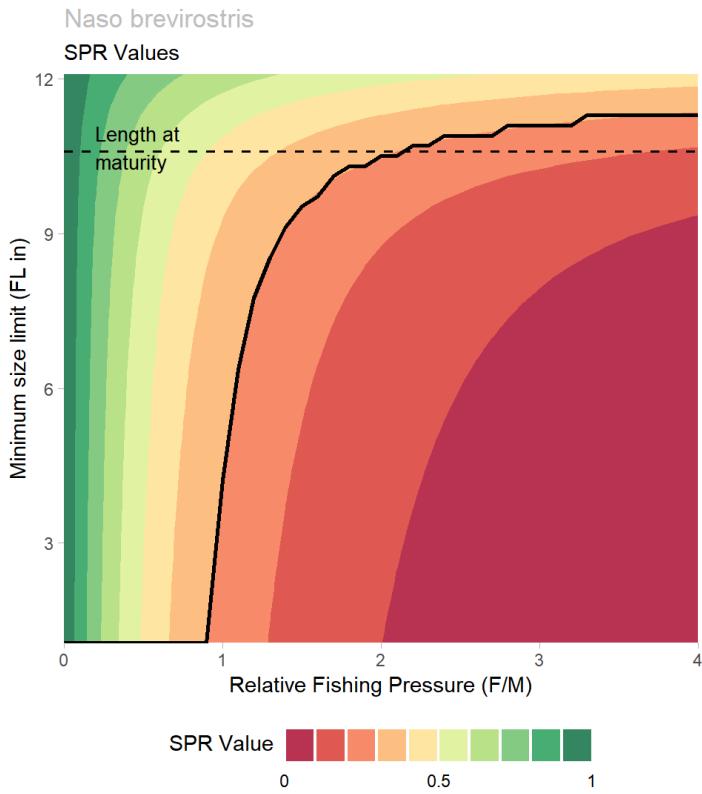
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Naso brevirostris - YPR Values

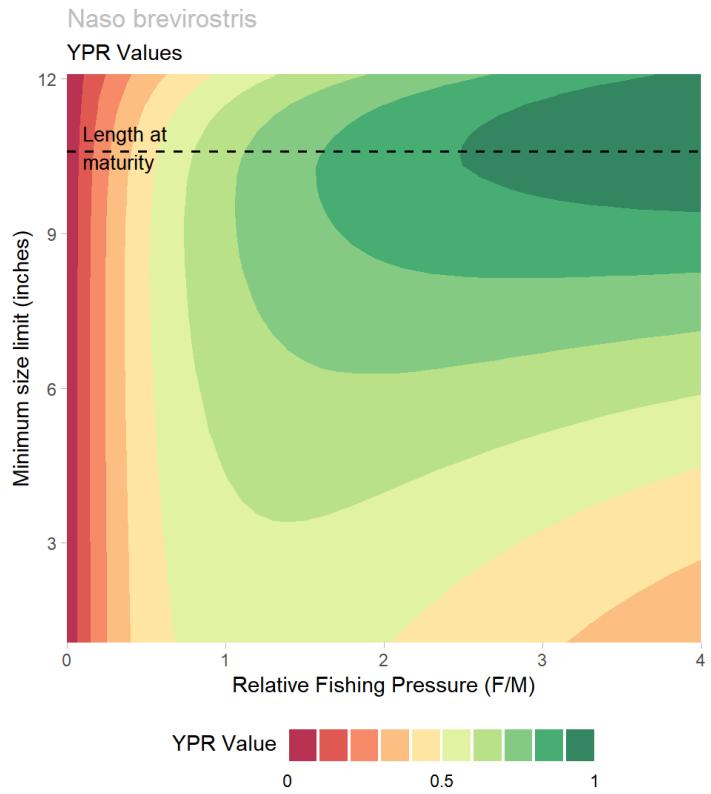
Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	242	9.5	<b>0.68</b>	<b>0.84</b>	<b>0.91</b>
1 x L <sub>m</sub>	269	10.6	<b>0.67</b>	<b>0.86</b>	<b>1.00</b>
1.1 x L <sub>m</sub>	296	11.7	<b>0.59</b>	<b>0.80</b>	<b>1.00</b>
Current size limit	0	0.0	<b>0.53</b>	<b>0.48</b>	<b>0.30</b>

*Note:*

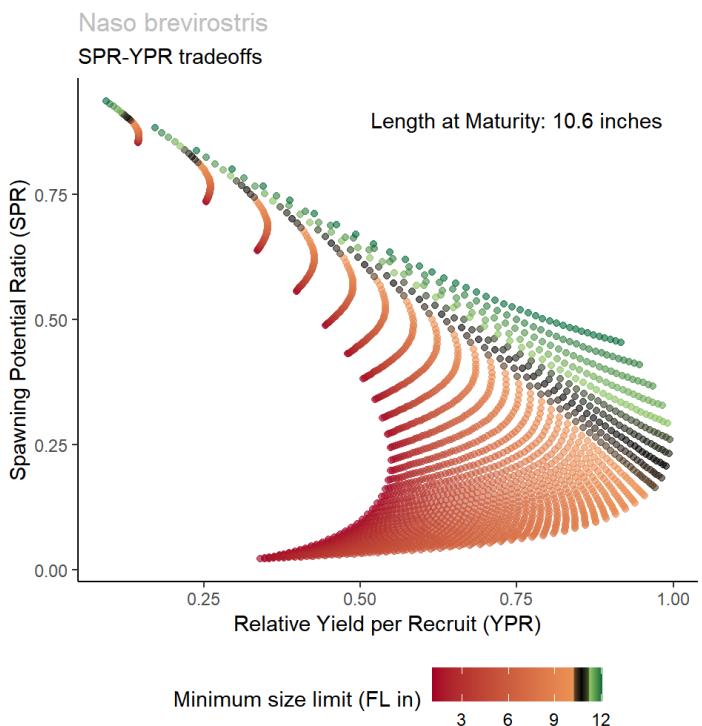
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



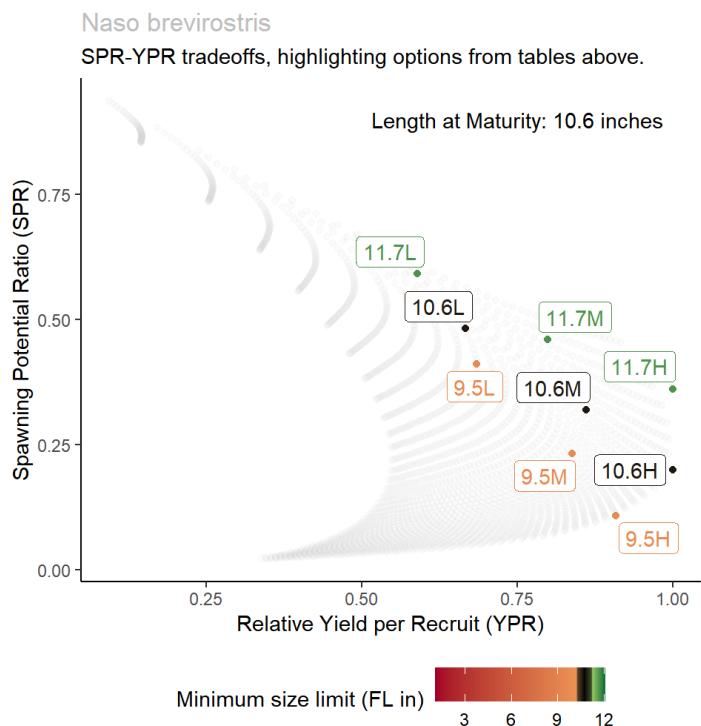
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: Naso hexacanthus

**Hawaiian Name:** 'Opelu kala

**Common Name:** Sleek Unicornfish

**Family:** Surgeonfishes

**Current Minimum Size Limit (FL):** 16 inches

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 599 mm FL

**K (von Bertalanffy growth parameter):** 0.221 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.22

**L<sub>m</sub> (Length at maturity):** 511 mm FL

**L<sub>m</sub> (Length at maturity):** 20 inches FL

**M (natural mortality rate):** 0.07 per year

**Longevity:** 44 years

**M/K:** 0.32

**L<sub>m</sub>/L<sub>oo</sub>:** 0.85

### Naso hexacanthus - SPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	460	18.1	<b>0.41</b>	<b>0.23</b>	<b>0.11</b>
1 x L <sub>m</sub>	511	20.1	<b>0.49</b>	<b>0.34</b>	<b>0.22</b>
1.1 x L <sub>m</sub>	562	22.1	<b>0.64</b>	<b>0.52</b>	<b>0.43</b>
Current size limit	406	16.0	<b>0.36</b>	<b>0.18</b>	<b>0.06</b>

*Note:*

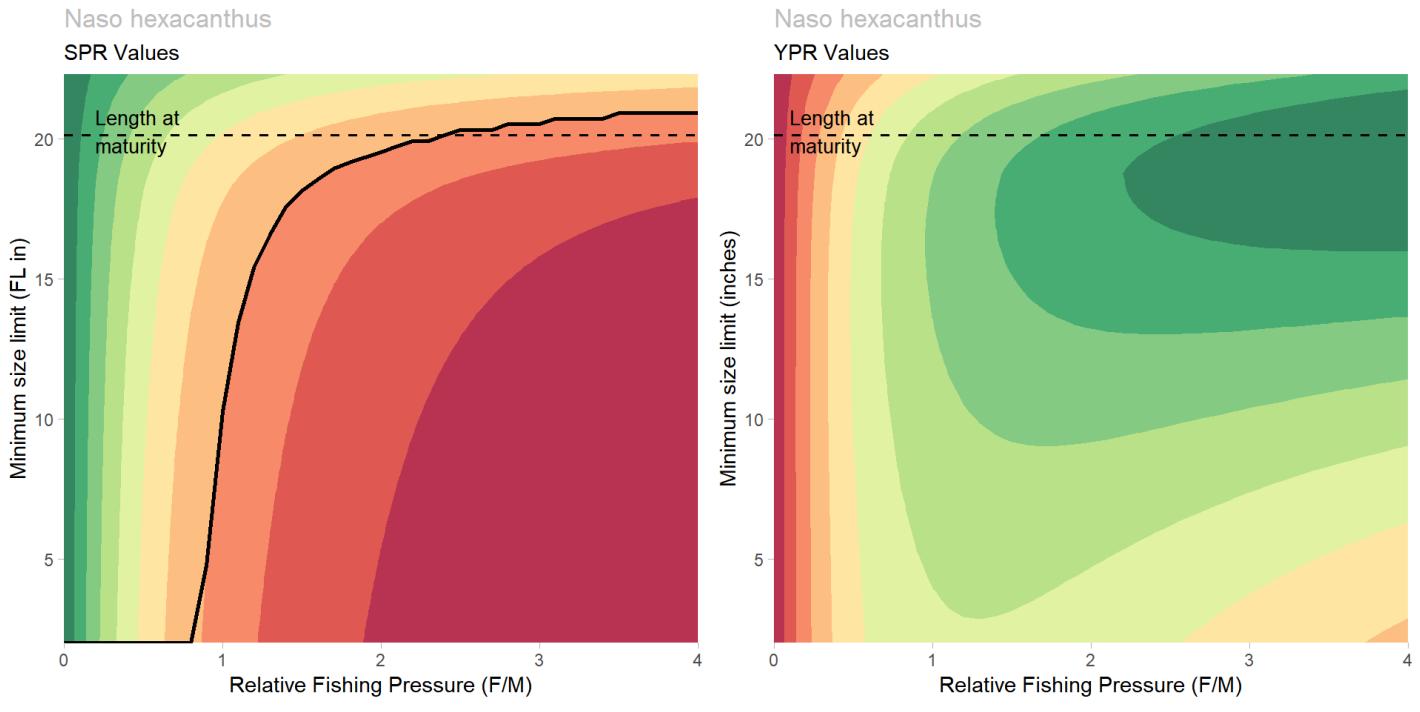
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Naso hexacanthus - YPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	460	18.1	<b>0.71</b>	<b>0.88</b>	<b>0.98</b>
1 x L <sub>m</sub>	511	20.1	<b>0.65</b>	<b>0.84</b>	<b>0.99</b>
1.1 x L <sub>m</sub>	562	22.1	<b>0.50</b>	<b>0.67</b>	<b>0.83</b>
Current size limit	406	16.0	<b>0.71</b>	<b>0.86</b>	<b>0.90</b>

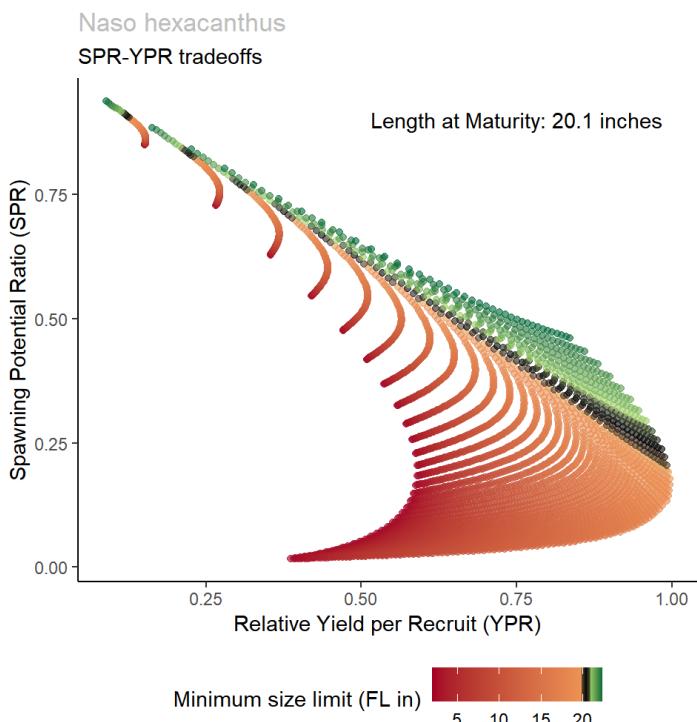
*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

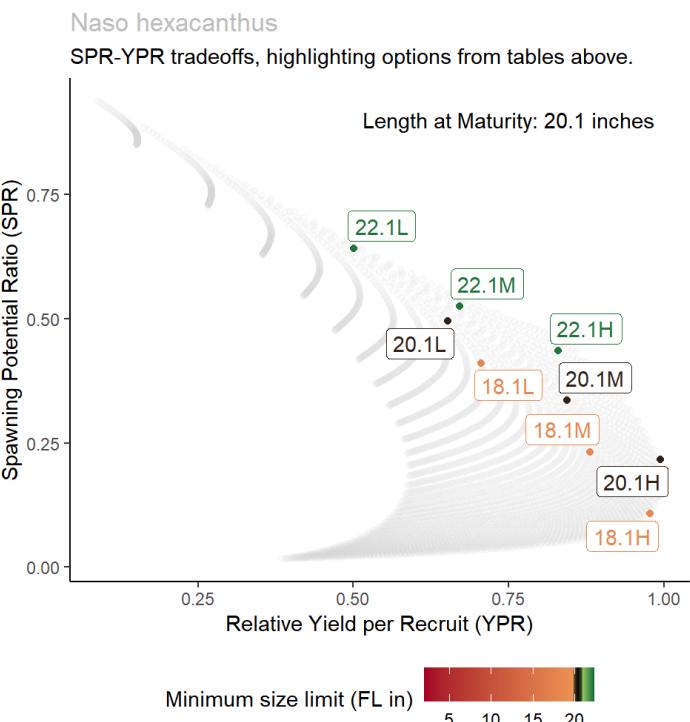


Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: Naso lituratus

**Hawaiian Name:** Umauma lei

**Common Name:** Orangespine Unicornfish

**Family:** Surgeonfishes

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 256 mm FL

**K (von Bertalanffy growth parameter):** 0.3408 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.66

**L<sub>m</sub> (Length at maturity):** 199 mm FL

**L<sub>m</sub> (Length at maturity):** 8 inches FL

**M (natural mortality rate):** 0.13 per year

**Longevity:** 25 years

**M/K:** 0.38

**L<sub>m</sub>/L<sub>oo</sub>:** 0.78

### Naso lituratus - SPR Values

Option	Minimum Size Limit		Fishing Pressure (F/M)		
	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	179	7.0	0.41	0.24	0.11
1 x L <sub>m</sub>	199	7.8	0.47	0.31	0.19
1.1 x L <sub>m</sub>	219	8.6	0.56	0.43	0.32
1.2 x L <sub>m</sub>	239	9.4	0.70	0.60	0.53

*Note:*

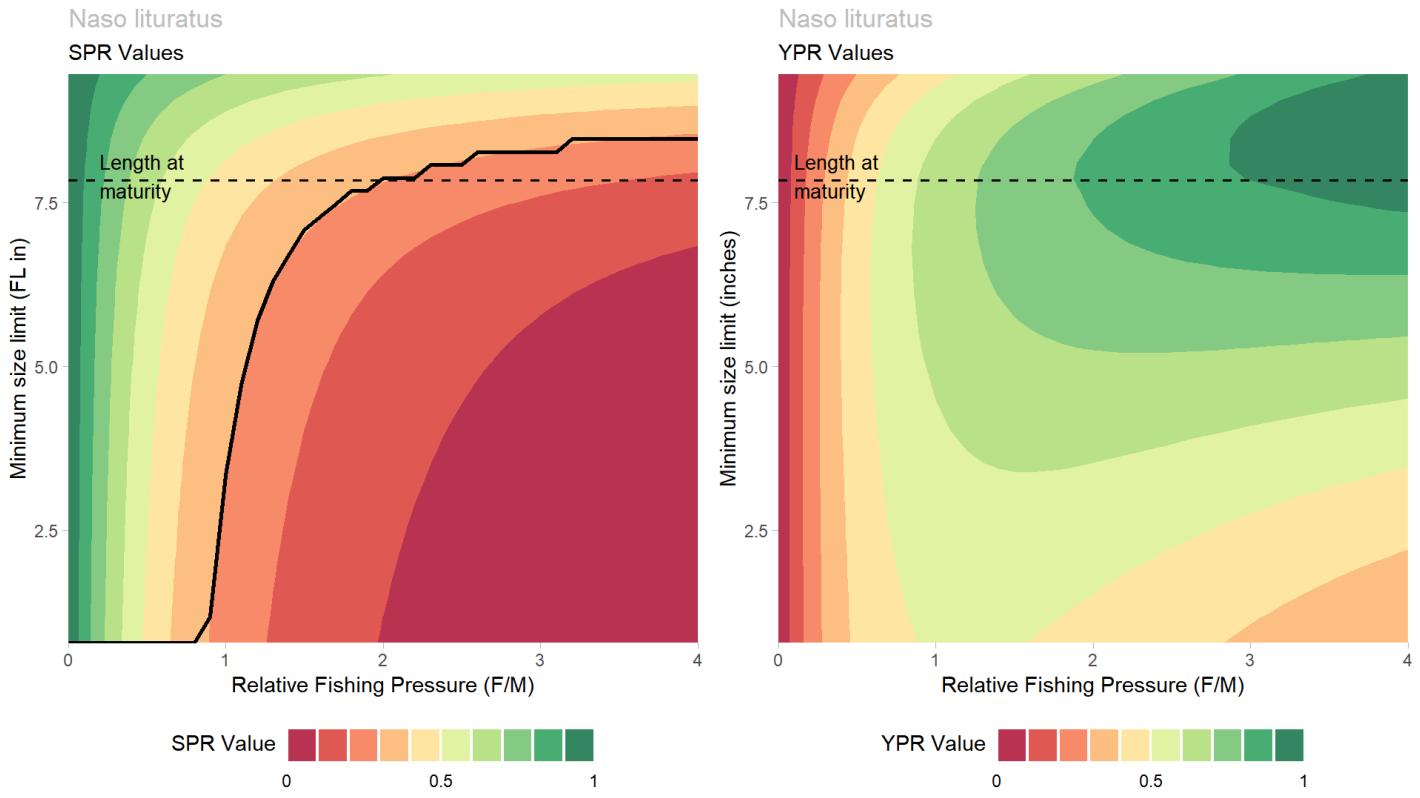
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Naso lituratus - YPR Values

Option	Minimum Size Limit		Fishing Pressure (F/M)		
	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	179	7.0	0.64	0.79	0.87
1 x L <sub>m</sub>	199	7.8	0.63	0.81	0.96
1.1 x L <sub>m</sub>	219	8.6	0.58	0.79	1.00
1.2 x L <sub>m</sub>	239	9.4	0.47	0.67	0.92

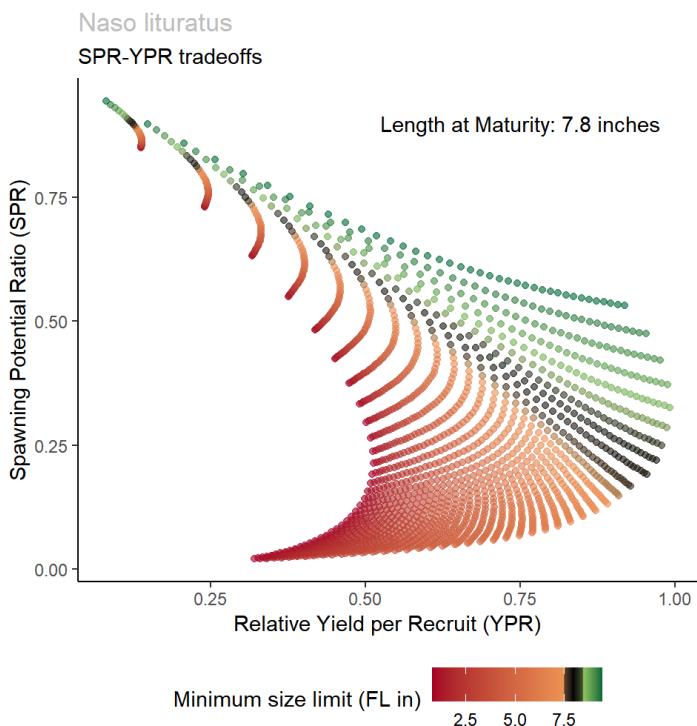
*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

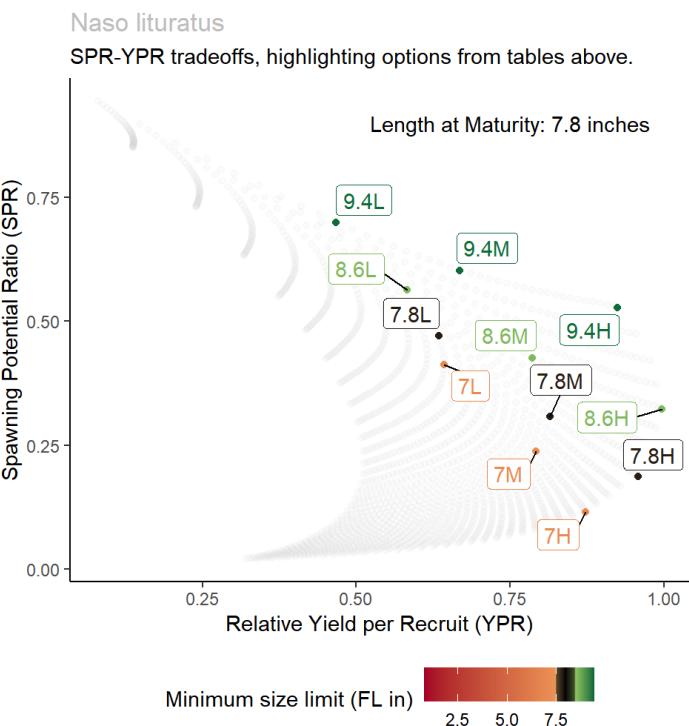


Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: Naso unicornis - male

**Hawaiian Name:** Kala

**Common Name:** Bluespine Unicornfish

**Family:** Surgeonfishes

**Current Minimum Size Limit (FL):** 14 inches

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 476 mm FL

**K (von Bertalanffy growth parameter):** 0.46 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.11

**L<sub>m</sub> (Length at maturity):** 301 mm FL

**L<sub>m</sub> (Length at maturity):** 12 inches FL

**M (natural mortality rate):** 0.06 per year

**Longevity:** 50 years

**M/K:** 0.13

**L<sub>m</sub>/L<sub>oo</sub>:** 0.63

### Naso unicornis - male - SPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	271	10.7	<b>0.44</b>	<b>0.26</b>	<b>0.13</b>
1 x L <sub>m</sub>	301	11.9	<b>0.45</b>	<b>0.28</b>	<b>0.14</b>
1.1 x L <sub>m</sub>	331	13.0	<b>0.46</b>	<b>0.29</b>	<b>0.16</b>
1.2 x L <sub>m</sub>	361	14.2	<b>0.48</b>	<b>0.31</b>	<b>0.18</b>
1.3 x L <sub>m</sub>	391	15.4	<b>0.51</b>	<b>0.35</b>	<b>0.22</b>
1.5 x L <sub>m</sub>	452	17.8	<b>0.65</b>	<b>0.54</b>	<b>0.45</b>
Current size limit	356	14.0	<b>0.48</b>	<b>0.31</b>	<b>0.18</b>

*Note:*

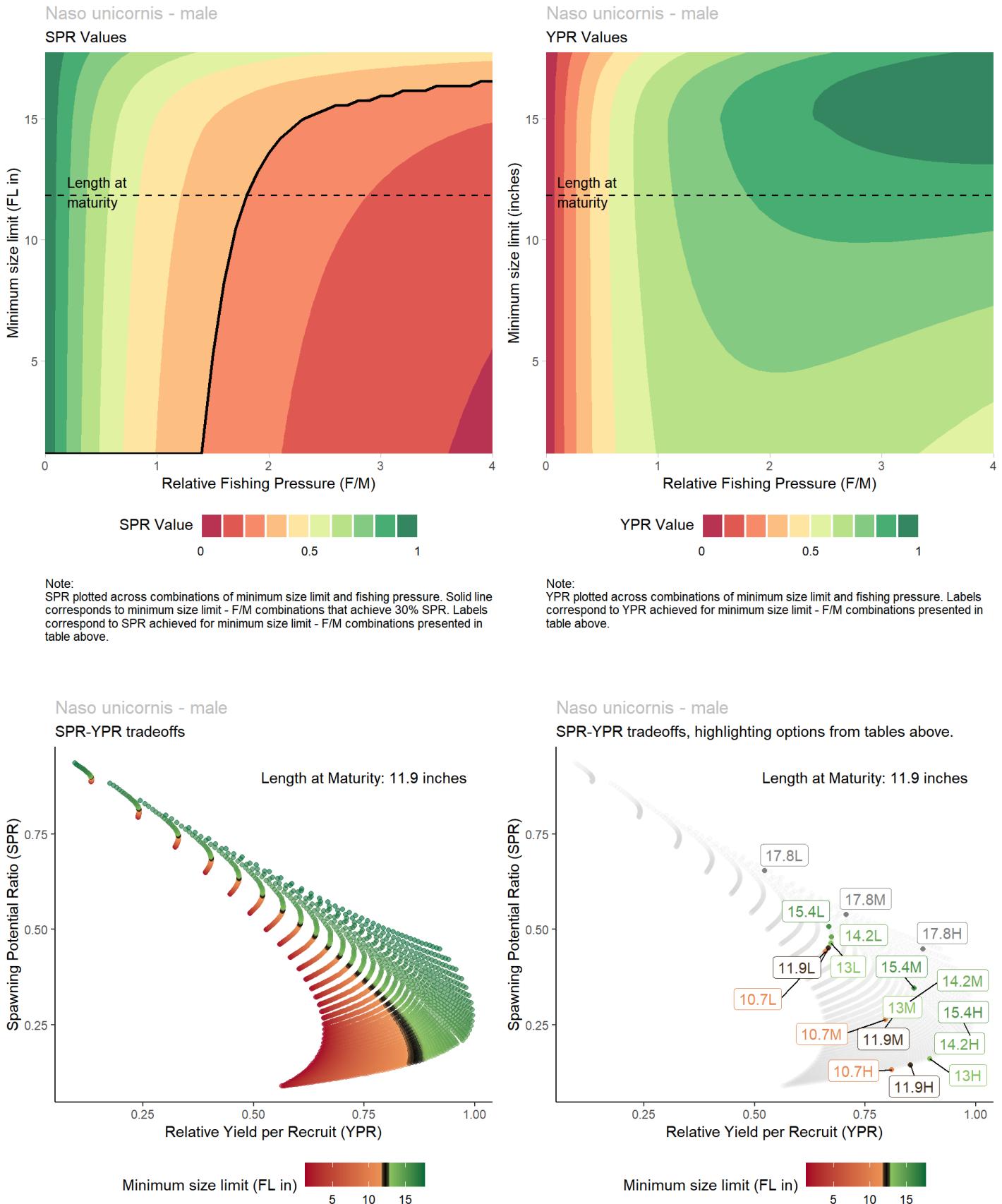
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Naso unicornis - male - YPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	271	10.7	<b>0.66</b>	<b>0.80</b>	<b>0.81</b>
1 x L <sub>m</sub>	301	11.9	<b>0.67</b>	<b>0.82</b>	<b>0.85</b>
1.1 x L <sub>m</sub>	331	13.0	<b>0.67</b>	<b>0.83</b>	<b>0.90</b>
1.2 x L <sub>m</sub>	361	14.2	<b>0.67</b>	<b>0.85</b>	<b>0.94</b>
1.3 x L <sub>m</sub>	391	15.4	<b>0.67</b>	<b>0.86</b>	<b>0.99</b>
1.5 x L <sub>m</sub>	452	17.8	<b>0.52</b>	<b>0.71</b>	<b>0.88</b>
Current size limit	356	14.0	<b>0.67</b>	<b>0.85</b>	<b>0.93</b>

*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



## Species: Naso unicornis - female

**Hawaiian Name:** Kala

**Common Name:** Bluespine Unicornfish

**Family:** Surgeonfishes

**Current Minimum Size Limit (FL):** 14 inches

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 480 mm FL

**K (von Bertalanffy growth parameter):** 0.43 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.14

**L<sub>m</sub> (Length at maturity):** 355 mm FL

**L<sub>m</sub> (Length at maturity):** 14 inches FL

**M (natural mortality rate):** 0.06 per year

**Longevity:** 50 years

**M/K:** 0.14

**L<sub>m</sub>/L<sub>oo</sub>:** 0.74

### Naso unicornis - female - SPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	320	12.6	<b>0.45</b>	<b>0.27</b>	<b>0.14</b>
1 x L <sub>m</sub>	355	14.0	<b>0.47</b>	<b>0.29</b>	<b>0.16</b>
1.1 x L <sub>m</sub>	391	15.4	<b>0.50</b>	<b>0.33</b>	<b>0.21</b>
1.2 x L <sub>m</sub>	426	16.8	<b>0.56</b>	<b>0.42</b>	<b>0.31</b>
Current size limit	356	14.0	<b>0.47</b>	<b>0.29</b>	<b>0.16</b>

*Note:*

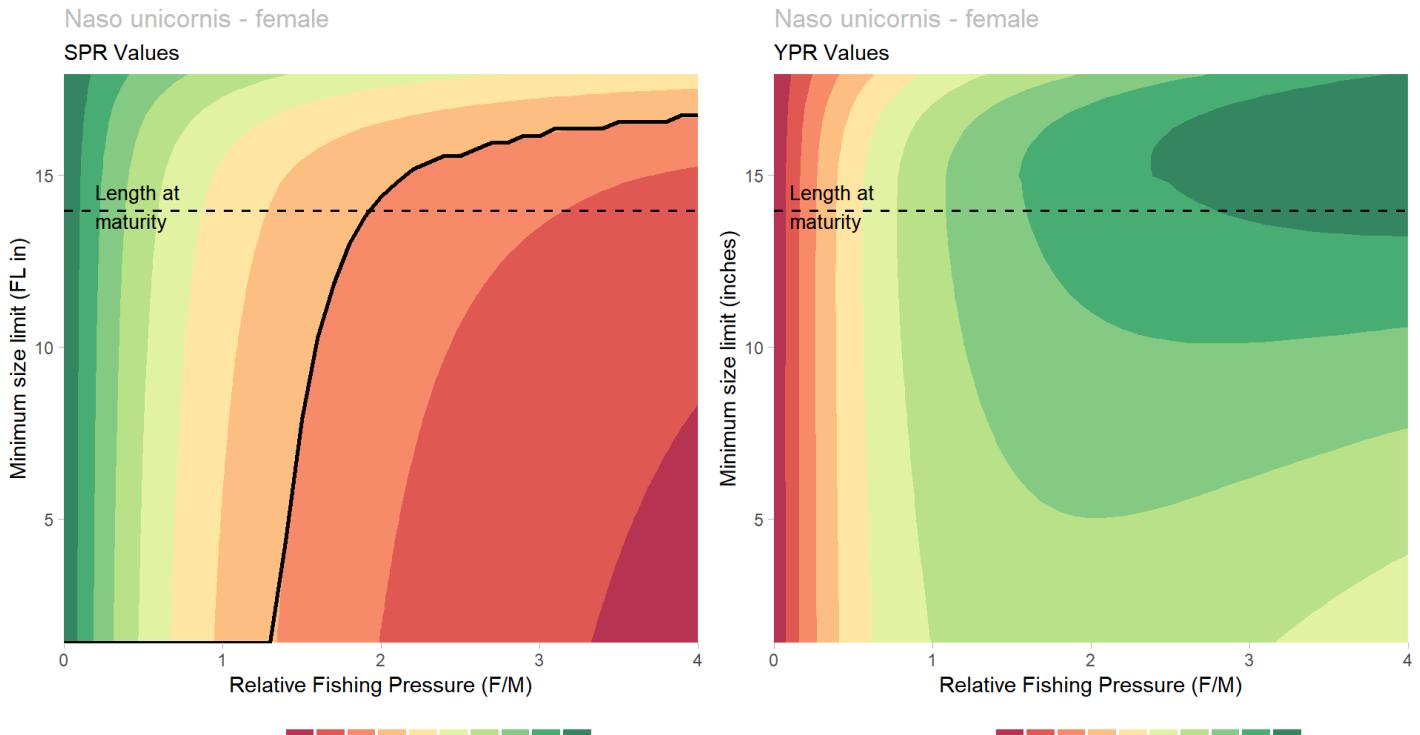
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Naso unicornis - female - YPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	320	12.6	<b>0.67</b>	<b>0.83</b>	<b>0.88</b>
1 x L <sub>m</sub>	355	14.0	<b>0.68</b>	<b>0.85</b>	<b>0.93</b>
1.1 x L <sub>m</sub>	391	15.4	<b>0.67</b>	<b>0.86</b>	<b>0.99</b>
1.2 x L <sub>m</sub>	426	16.8	<b>0.62</b>	<b>0.82</b>	<b>0.99</b>
Current size limit	356	14.0	<b>0.68</b>	<b>0.85</b>	<b>0.93</b>

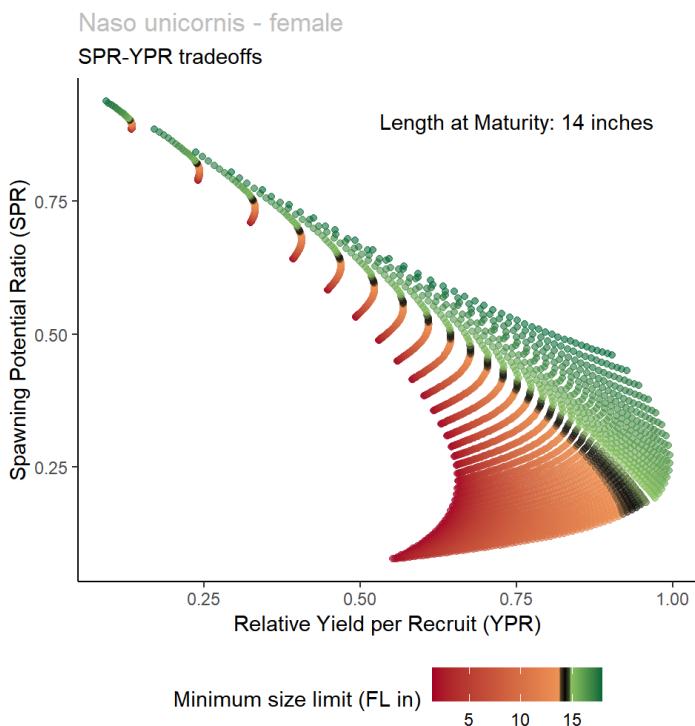
*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

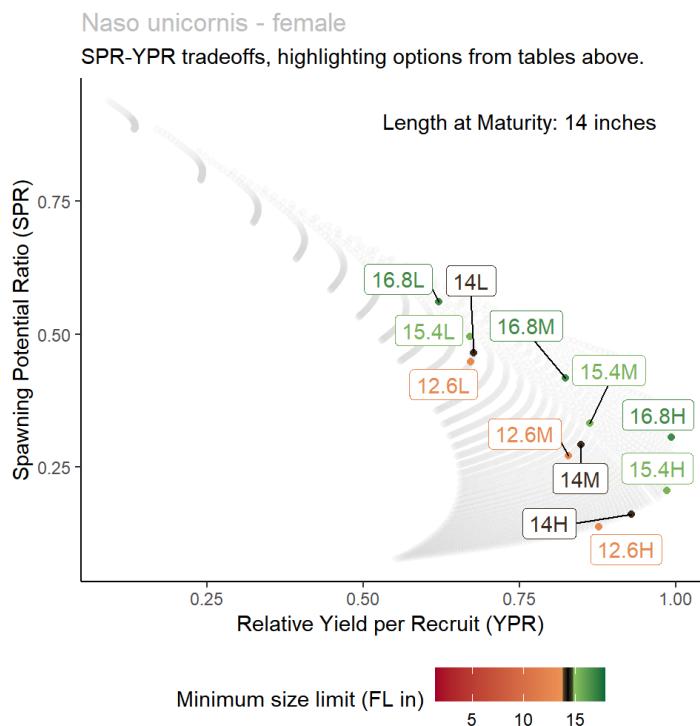


Note:  
 SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

Note:  
 YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
 All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
 All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

# Albulidae - Bonefishes

## Species: *Albula glossodonta*

**Hawaiian Name:** 'O'io

**Common Name:** Shortjaw Bonefish

**Family:** Bonefishes

**Current Minimum Size Limit (FL):** 14 inches

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 673 mm FL

**K (von Bertalanffy growth parameter):** 0.18 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.68

**L<sub>m</sub> (Length at maturity):** 424 mm FL

**L<sub>m</sub> (Length at maturity):** 17 inches FL

**M (natural mortality rate):** 0.23 per year

**Longevity:** 14 years

**M/K:** 1.28

**L<sub>m</sub>/L<sub>oo</sub>:** 0.63

### *Albula glossodonta* - SPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	382	15.0	<b>0.32</b>	<b>0.16</b>	<b>0.06</b>
1 x L <sub>m</sub>	424	16.7	<b>0.40</b>	<b>0.24</b>	<b>0.14</b>
1.1 x L <sub>m</sub>	466	18.3	<b>0.48</b>	<b>0.33</b>	<b>0.24</b>
1.2 x L <sub>m</sub>	509	20.0	<b>0.58</b>	<b>0.46</b>	<b>0.38</b>
1.3 x L <sub>m</sub>	551	21.7	<b>0.68</b>	<b>0.59</b>	<b>0.52</b>
1.5 x L <sub>m</sub>	636	25.0	<b>0.88</b>	<b>0.84</b>	<b>0.81</b>
Current size limit	356	14.0	<b>0.29</b>	<b>0.13</b>	<b>0.04</b>

**Note:**

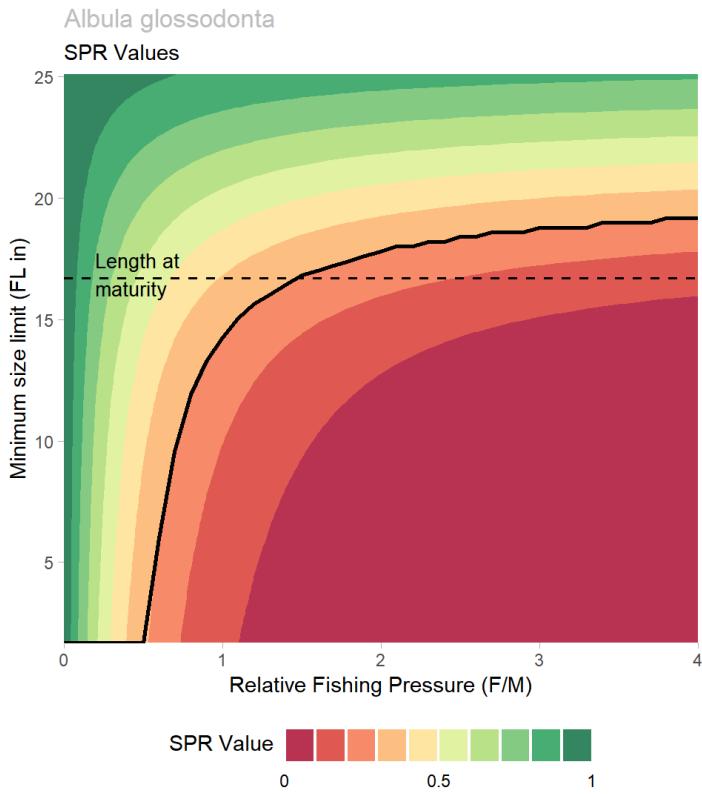
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### *Albula glossodonta* - YPR Values

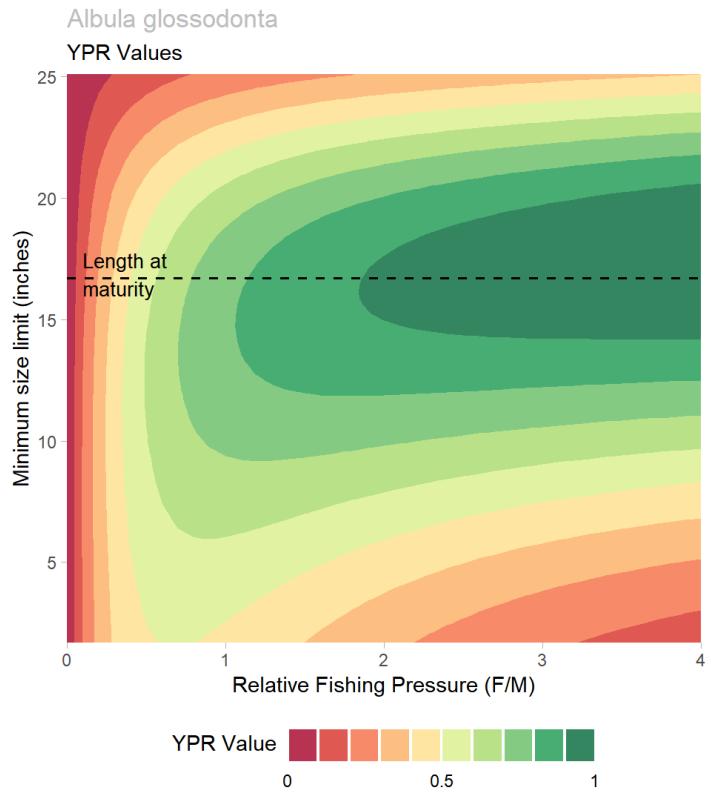
Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	382	15.0	<b>0.79</b>	<b>0.90</b>	<b>0.95</b>
1 x L <sub>m</sub>	424	16.7	<b>0.77</b>	<b>0.92</b>	<b>1.00</b>
1.1 x L <sub>m</sub>	466	18.3	<b>0.73</b>	<b>0.90</b>	<b>1.00</b>
1.2 x L <sub>m</sub>	509	20.0	<b>0.64</b>	<b>0.82</b>	<b>0.97</b>
1.3 x L <sub>m</sub>	551	21.7	<b>0.53</b>	<b>0.70</b>	<b>0.85</b>
1.5 x L <sub>m</sub>	636	25.0	<b>0.24</b>	<b>0.34</b>	<b>0.45</b>
Current size limit	356	14.0	<b>0.79</b>	<b>0.88</b>	<b>0.90</b>

**Note:**

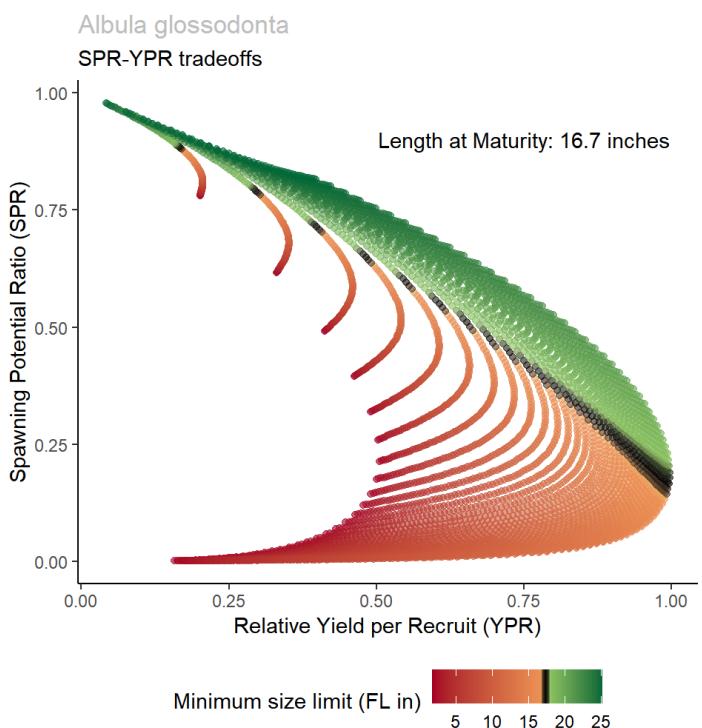
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



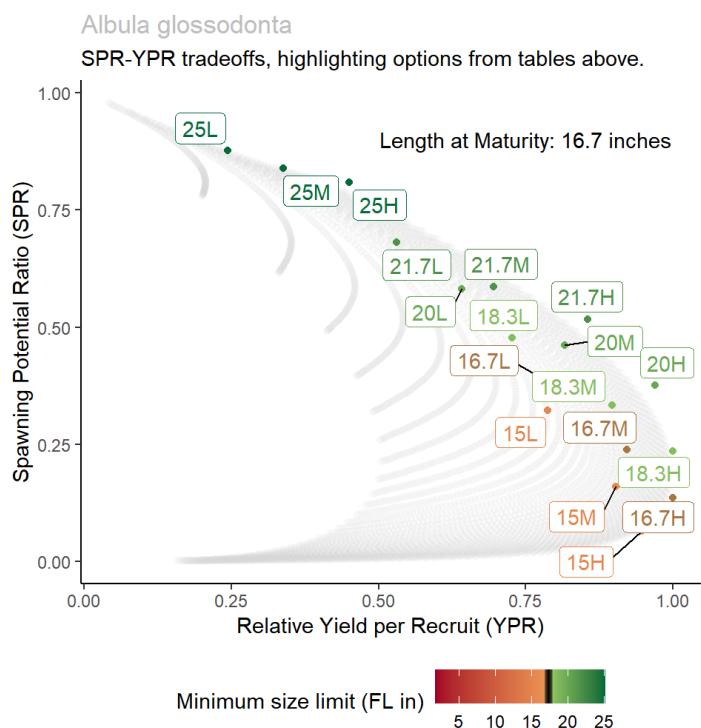
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: **Albula virgata**

**Hawaiian Name:** 'O'io

**Common Name:** Longjaw Bonefish

**Family:** Bonefishes

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 564 mm FL

**K (von Bertalanffy growth parameter):** 0.26 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.49

**L<sub>m</sub> (Length at maturity):** 432 mm FL

**L<sub>m</sub> (Length at maturity):** 17 inches FL

**M (natural mortality rate):** 0.29 per year

**Longevity:** 11 years

**M/K:** 1.12

**L<sub>m</sub>/L<sub>oo</sub>:** 0.77

### Albula virgata - SPR Values

Option	Minimum Size Limit		Fishing Pressure (F/M)		
	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	389	15.3	0.33	0.17	0.07
1 x L <sub>m</sub>	432	17.0	0.44	0.29	0.19
1.1 x L <sub>m</sub>	475	18.7	0.60	0.48	0.40
1.2 x L <sub>m</sub>	518	20.4	0.77	0.70	0.64

**Note:**

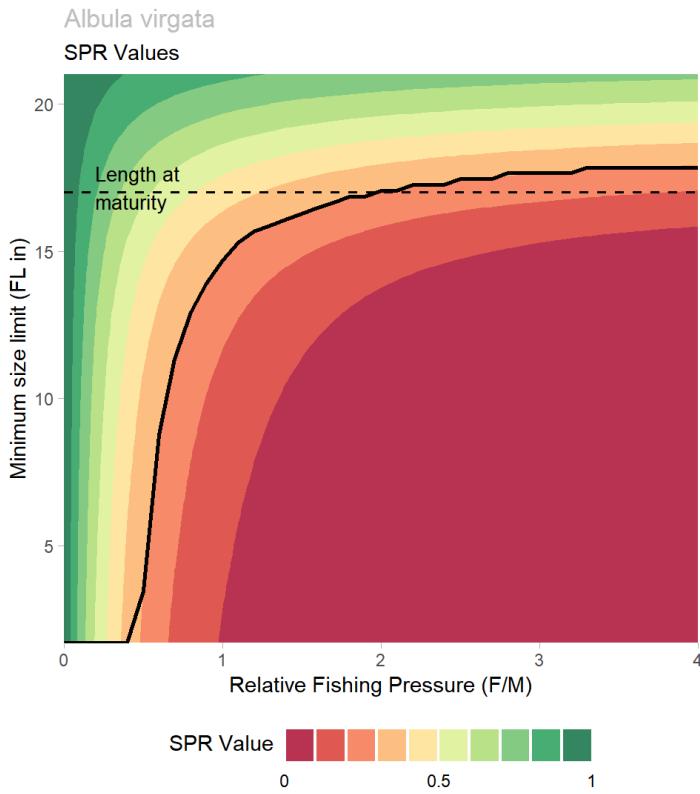
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Albula virgata - YPR Values

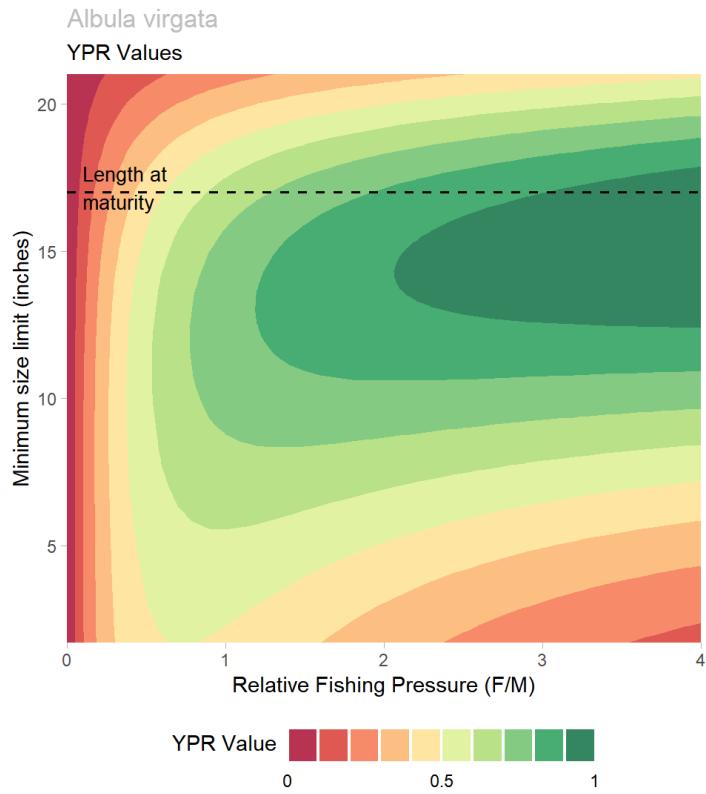
Option	Minimum Size Limit		Fishing Pressure (F/M)		
	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	389	15.3	0.72	0.89	1.00
1 x L <sub>m</sub>	432	17.0	0.64	0.81	0.96
1.1 x L <sub>m</sub>	475	18.7	0.51	0.67	0.84
1.2 x L <sub>m</sub>	518	20.4	0.32	0.44	0.57

**Note:**

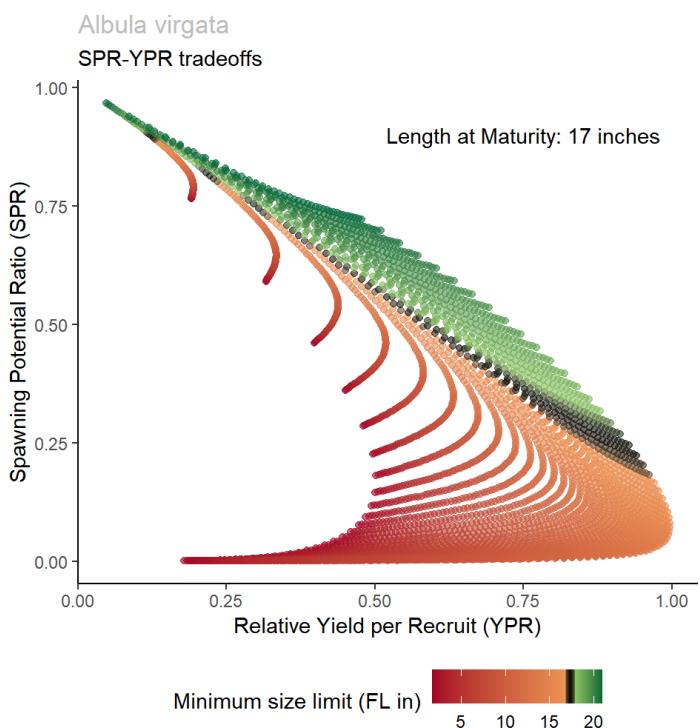
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



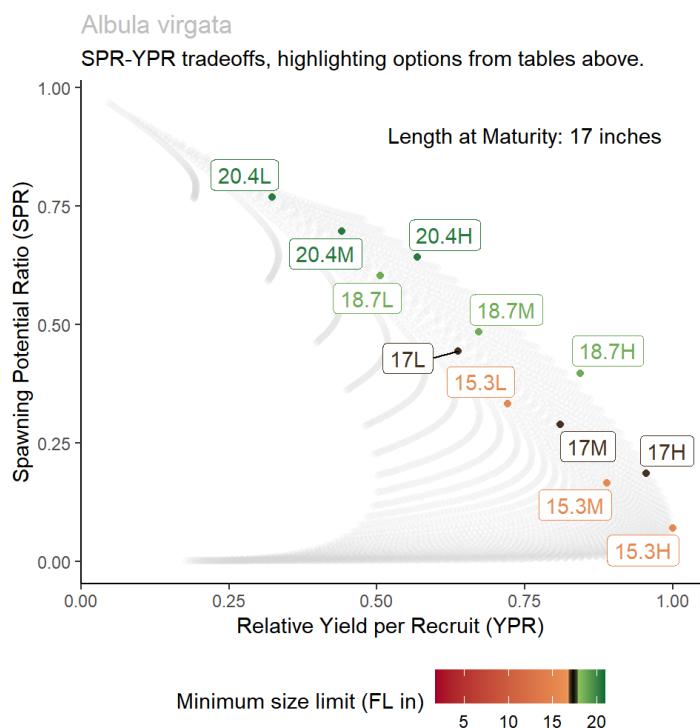
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

# Carangidae - Jacks

## Species: *Caranx ignobilis*

**Hawaiian Name:** Ulua aukea

**Common Name:** Giant Trevally

**Family:** Jacks

**Current Minimum Size Limit (FL):** 10 inches

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 1944 mm FL

**K (von Bertalanffy growth parameter):** 0.111 per year

**t<sub>0</sub> (von Bertalanffy parameter):** 0.097

**L<sub>m</sub> (Length at maturity):** 740 mm FL

**L<sub>m</sub> (Length at maturity):** 29 inches FL

**M (natural mortality rate):** 0.29 per year

**Longevity:** 11 years

**M/K:** 2.61

**L<sub>m</sub>/L<sub>oo</sub>:** 0.38

### *Caranx ignobilis* - SPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	666	26.2	<b>0.27</b>	<b>0.12</b>	<b>0.05</b>
1 x L <sub>m</sub>	740	29.1	<b>0.31</b>	<b>0.17</b>	<b>0.09</b>
1.1 x L <sub>m</sub>	814	32.0	<b>0.36</b>	<b>0.22</b>	<b>0.14</b>
1.2 x L <sub>m</sub>	888	35.0	<b>0.42</b>	<b>0.28</b>	<b>0.20</b>
1.3 x L <sub>m</sub>	962	37.9	<b>0.47</b>	<b>0.35</b>	<b>0.27</b>
1.5 x L <sub>m</sub>	1110	43.7	<b>0.59</b>	<b>0.49</b>	<b>0.42</b>
2 x L <sub>m</sub>	1480	58.3	<b>0.85</b>	<b>0.81</b>	<b>0.78</b>
Current size limit	254	10.0	<b>0.13</b>	<b>0.03</b>	<b>0.00</b>

*Note:*

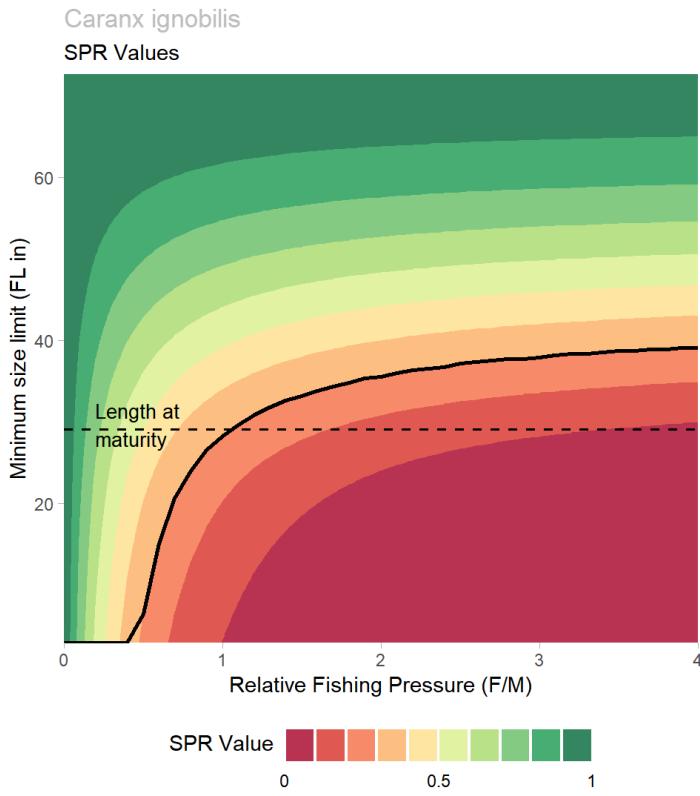
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### *Caranx ignobilis* - YPR Values

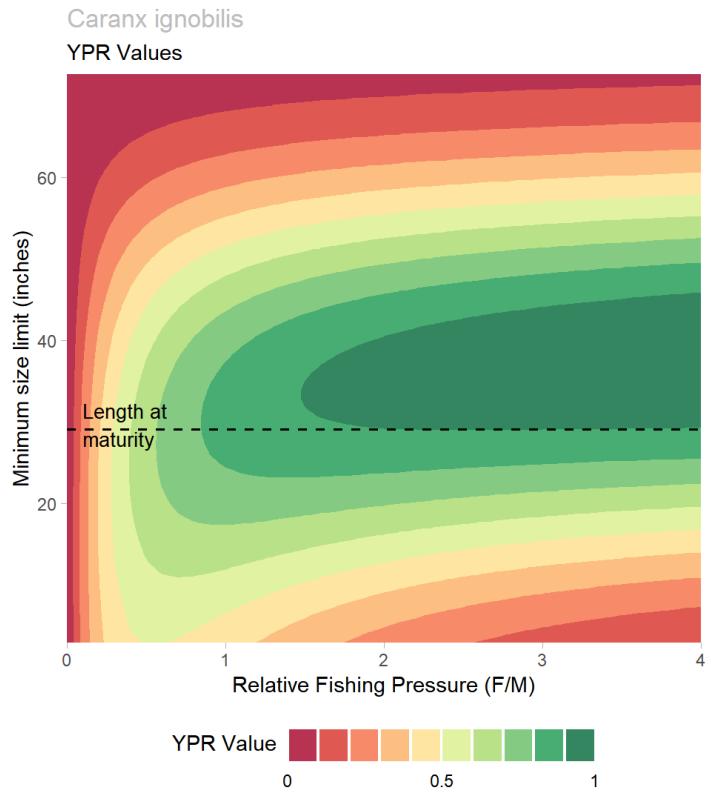
Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	666	26.2	<b>0.82</b>	<b>0.85</b>	<b>0.82</b>
1 x L <sub>m</sub>	740	29.1	<b>0.83</b>	<b>0.90</b>	<b>0.90</b>
1.1 x L <sub>m</sub>	814	32.0	<b>0.83</b>	<b>0.93</b>	<b>0.95</b>
1.2 x L <sub>m</sub>	888	35.0	<b>0.82</b>	<b>0.93</b>	<b>0.98</b>
1.3 x L <sub>m</sub>	962	37.9	<b>0.79</b>	<b>0.92</b>	<b>0.99</b>
1.5 x L <sub>m</sub>	1110	43.7	<b>0.70</b>	<b>0.85</b>	<b>0.95</b>
2 x L <sub>m</sub>	1480	58.3	<b>0.32</b>	<b>0.41</b>	<b>0.49</b>
Current size limit	254	10.0	<b>0.56</b>	<b>0.42</b>	<b>0.27</b>

*Note:*

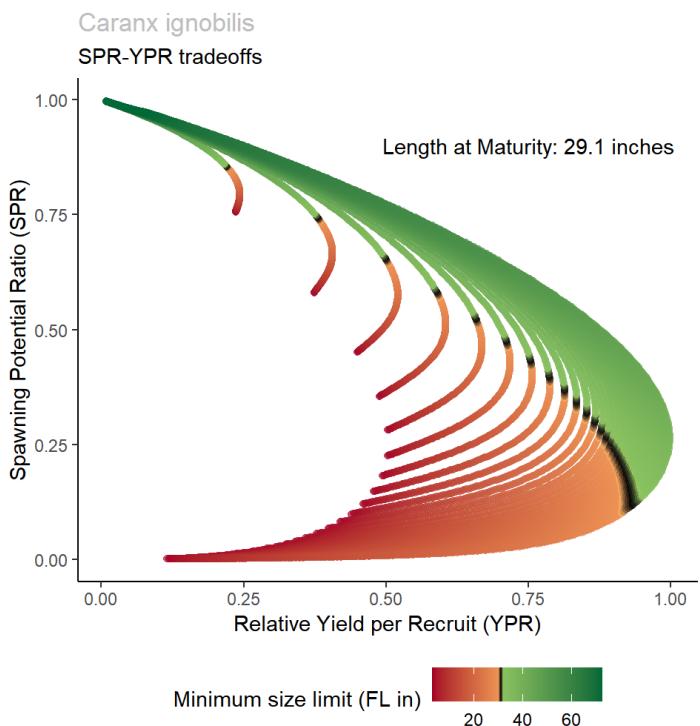
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



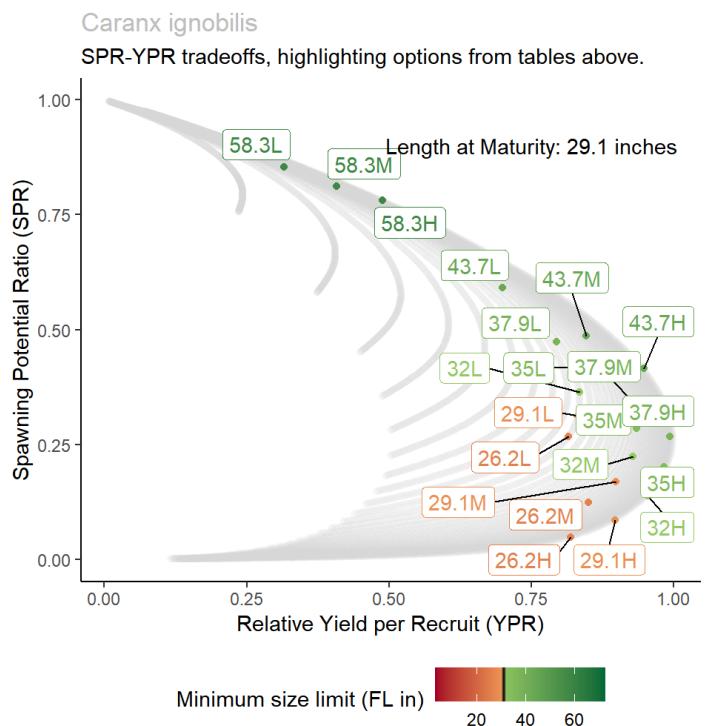
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: Caranx lugubris

**Hawaiian Name:** Ulua la'uli

**Common Name:** Black Trevally

**Family:** Jacks

**Current Minimum Size Limit (FL):** 10 inches

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 822 mm FL

**K (von Bertalanffy growth parameter):** 0.12 per year

**t<sub>0</sub> (von Bertalanffy parameter):** 0

**L<sub>m</sub> (Length at maturity):** 370 mm FL

**L<sub>m</sub> (Length at maturity):** 15 inches FL

**M (natural mortality rate):** 0.27 per year

**Longevity:** 12 years

**M/K:** 2.25

**L<sub>m</sub>/L<sub>oo</sub>:** 0.45

### Caranx lugubris - SPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	333	13.1	<b>0.28</b>	<b>0.14</b>	<b>0.05</b>
1 x L <sub>m</sub>	370	14.6	<b>0.34</b>	<b>0.19</b>	<b>0.10</b>
1.1 x L <sub>m</sub>	407	16.0	<b>0.40</b>	<b>0.25</b>	<b>0.16</b>
1.2 x L <sub>m</sub>	444	17.5	<b>0.46</b>	<b>0.33</b>	<b>0.25</b>
1.3 x L <sub>m</sub>	481	18.9	<b>0.53</b>	<b>0.41</b>	<b>0.33</b>
1.5 x L <sub>m</sub>	555	21.9	<b>0.67</b>	<b>0.58</b>	<b>0.52</b>
2 x L <sub>m</sub>	740	29.1	<b>0.94</b>	<b>0.92</b>	<b>0.91</b>
Current size limit	254	10.0	<b>0.20</b>	<b>0.07</b>	<b>0.01</b>

*Note:*

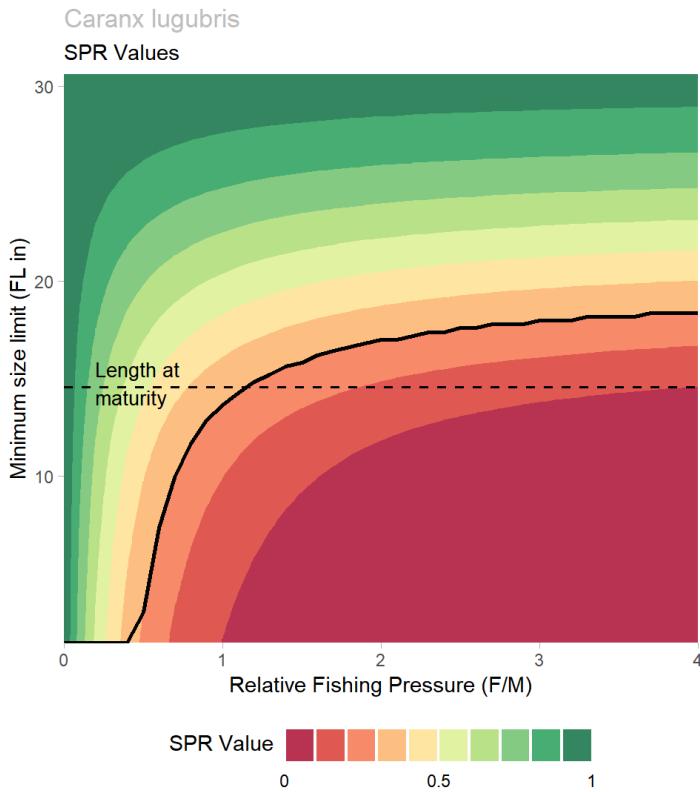
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Caranx lugubris - YPR Values

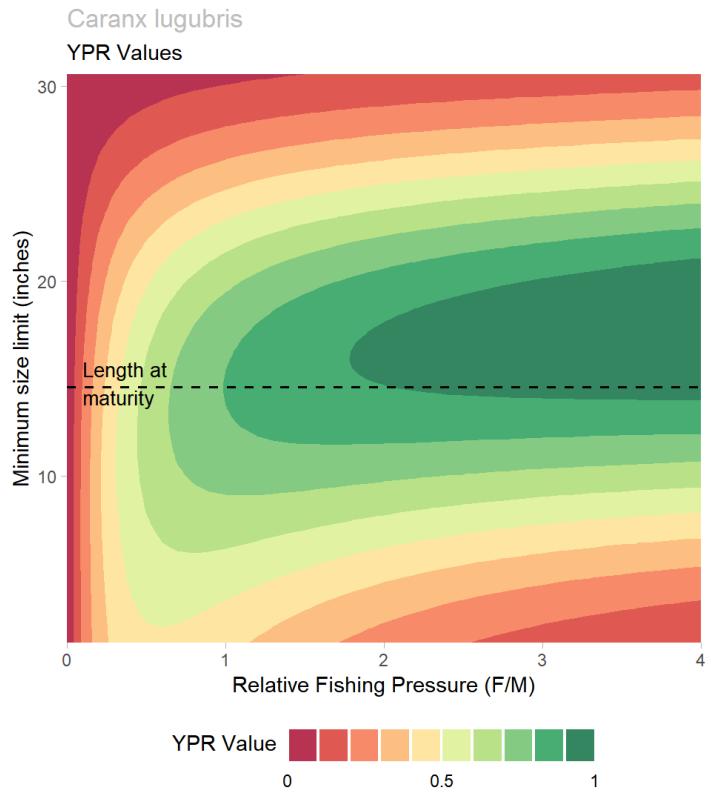
Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	333	13.1	<b>0.80</b>	<b>0.86</b>	<b>0.86</b>
1 x L <sub>m</sub>	370	14.6	<b>0.81</b>	<b>0.90</b>	<b>0.95</b>
1.1 x L <sub>m</sub>	407	16.0	<b>0.79</b>	<b>0.92</b>	<b>0.98</b>
1.2 x L <sub>m</sub>	444	17.5	<b>0.77</b>	<b>0.91</b>	<b>1.00</b>
1.3 x L <sub>m</sub>	481	18.9	<b>0.72</b>	<b>0.88</b>	<b>1.00</b>
1.5 x L <sub>m</sub>	555	21.9	<b>0.58</b>	<b>0.74</b>	<b>0.88</b>
2 x L <sub>m</sub>	740	29.1	<b>0.14</b>	<b>0.19</b>	<b>0.26</b>
Current size limit	254	10.0	<b>0.73</b>	<b>0.72</b>	<b>0.65</b>

*Note:*

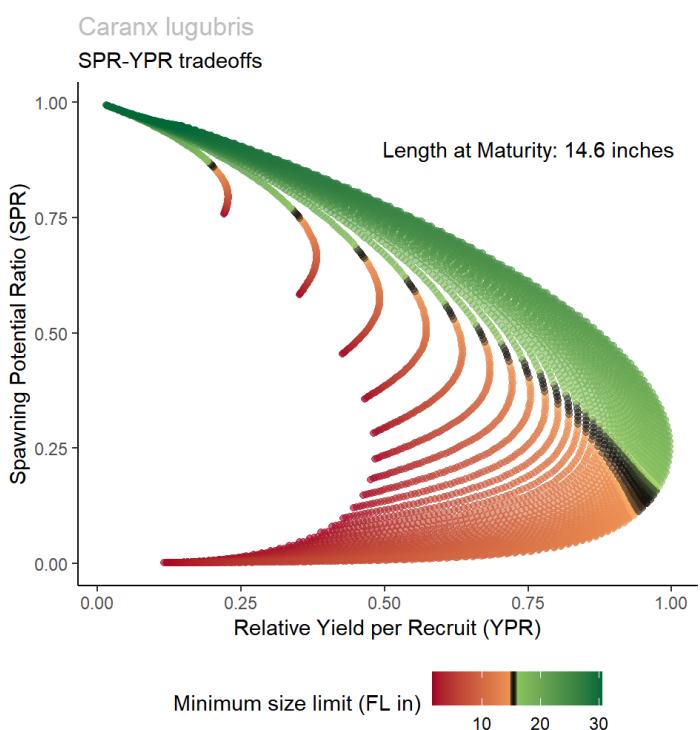
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



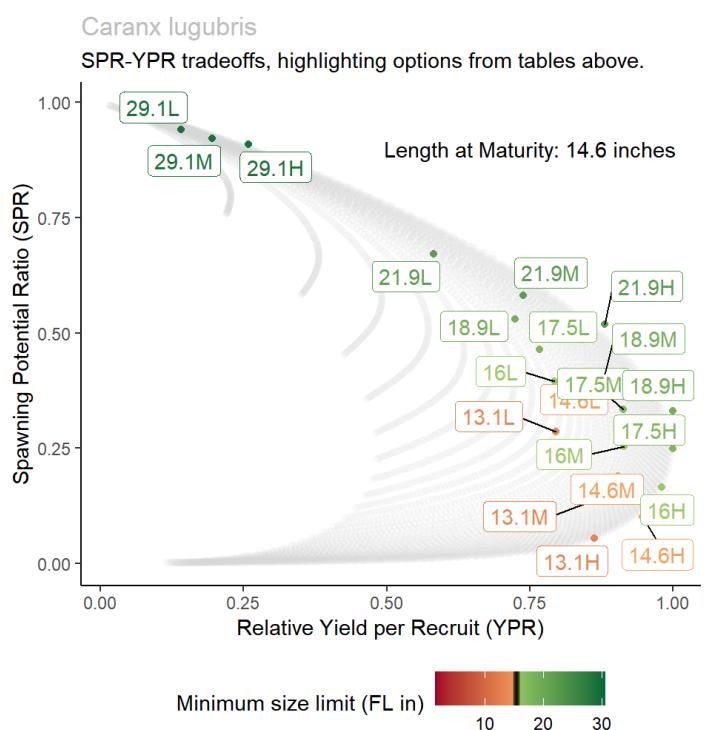
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: Caranx melampygus

**Hawaiian Name:** 'Omiliu

**Common Name:** Bluefin Trevally

**Family:** Jacks

**Current Minimum Size Limit (FL):** 10 inches

### Life History Parameters

**L<sub>0</sub> (von Bertalanffy asymptotic size):** 1014 mm FL

**K (von Bertalanffy growth parameter):** 0.233 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.044

**L<sub>m</sub> (Length at maturity):** 452 mm FL

**L<sub>m</sub> (Length at maturity):** 18 inches FL

**M (natural mortality rate):** 0.46 per year

**Longevity:** 7 years

**M/K:** 1.97

**L<sub>m</sub>/L<sub>0</sub>:** 0.45

### Caranx melampygus - SPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	407	16.0	<b>0.29</b>	<b>0.14</b>	<b>0.05</b>
1 x L <sub>m</sub>	452	17.8	<b>0.33</b>	<b>0.18</b>	<b>0.09</b>
1.1 x L <sub>m</sub>	497	19.6	<b>0.38</b>	<b>0.24</b>	<b>0.15</b>
1.2 x L <sub>m</sub>	542	21.3	<b>0.44</b>	<b>0.30</b>	<b>0.22</b>
1.3 x L <sub>m</sub>	588	23.1	<b>0.51</b>	<b>0.38</b>	<b>0.30</b>
1.5 x L <sub>m</sub>	678	26.7	<b>0.63</b>	<b>0.54</b>	<b>0.47</b>
2 x L <sub>m</sub>	904	35.6	<b>0.92</b>	<b>0.89</b>	<b>0.87</b>
Current size limit	254	10.0	<b>0.18</b>	<b>0.06</b>	<b>0.01</b>

*Note:*

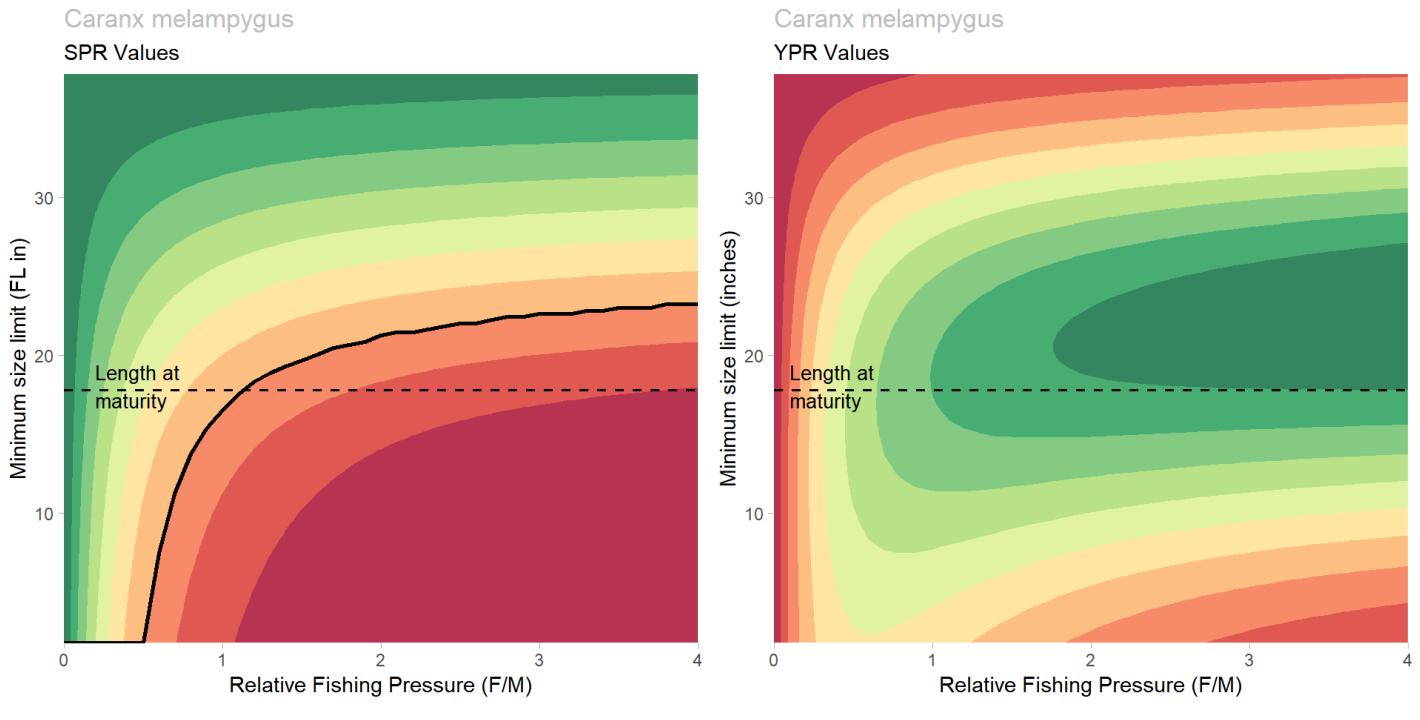
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Caranx melampygus - YPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	407	16.0	<b>0.79</b>	<b>0.83</b>	<b>0.81</b>
1 x L <sub>m</sub>	452	17.8	<b>0.80</b>	<b>0.88</b>	<b>0.89</b>
1.1 x L <sub>m</sub>	497	19.6	<b>0.80</b>	<b>0.91</b>	<b>0.95</b>
1.2 x L <sub>m</sub>	542	21.3	<b>0.78</b>	<b>0.91</b>	<b>0.98</b>
1.3 x L <sub>m</sub>	588	23.1	<b>0.75</b>	<b>0.89</b>	<b>0.98</b>
1.5 x L <sub>m</sub>	678	26.7	<b>0.63</b>	<b>0.78</b>	<b>0.90</b>
2 x L <sub>m</sub>	904	35.6	<b>0.19</b>	<b>0.26</b>	<b>0.33</b>
Current size limit	254	10.0	<b>0.66</b>	<b>0.60</b>	<b>0.48</b>

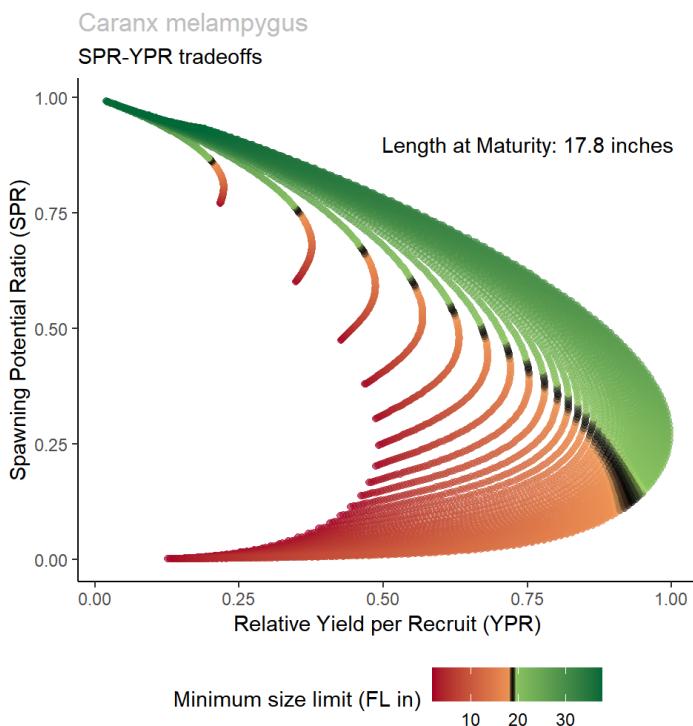
*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

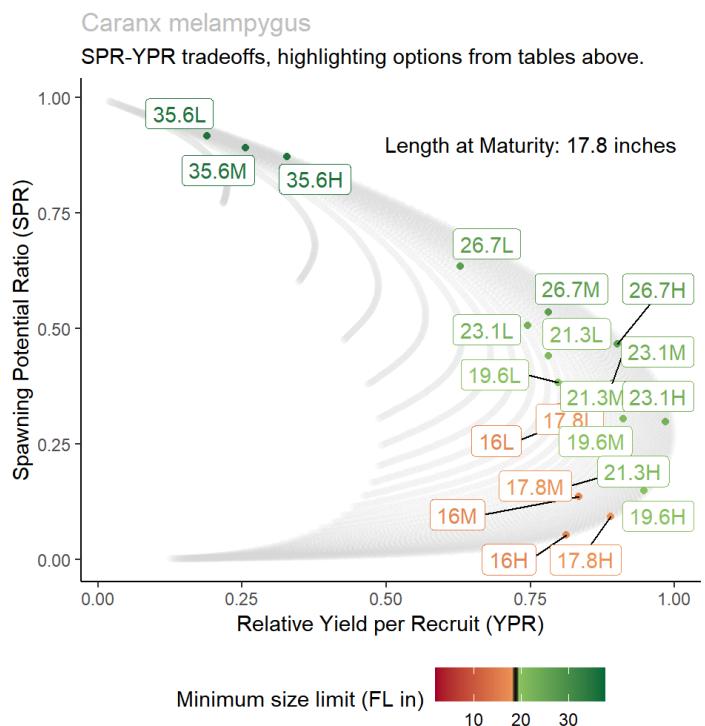


Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: **Caranx sexfasciatus**

**Hawaiian Name:** Pake ulua

**Common Name:** Bigeye Trevally

**Family:** Jacks

**Current Minimum Size Limit (FL):** 10 inches

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 800 mm FL

**K (von Bertalanffy growth parameter):** 0.24 per year

**t<sub>0</sub> (von Bertalanffy parameter):** 0

**L<sub>m</sub> (Length at maturity):** 455 mm FL

**L<sub>m</sub> (Length at maturity):** 18 inches FL

**M (natural mortality rate):** 0.29 per year

**Longevity:** 11 years

**M/K:** 1.21

**L<sub>m</sub>/L<sub>oo</sub>:** 0.57

### Caranx sexfasciatus - SPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	410	16.1	<b>0.32</b>	<b>0.16</b>	<b>0.07</b>
1 x L <sub>m</sub>	455	17.9	<b>0.37</b>	<b>0.21</b>	<b>0.11</b>
1.1 x L <sub>m</sub>	501	19.7	<b>0.43</b>	<b>0.28</b>	<b>0.18</b>
1.2 x L <sub>m</sub>	546	21.5	<b>0.50</b>	<b>0.37</b>	<b>0.27</b>
1.3 x L <sub>m</sub>	592	23.3	<b>0.58</b>	<b>0.46</b>	<b>0.38</b>
1.5 x L <sub>m</sub>	682	26.9	<b>0.75</b>	<b>0.67</b>	<b>0.62</b>
Current size limit	254	10.0	<b>0.21</b>	<b>0.07</b>	<b>0.01</b>

*Note:*

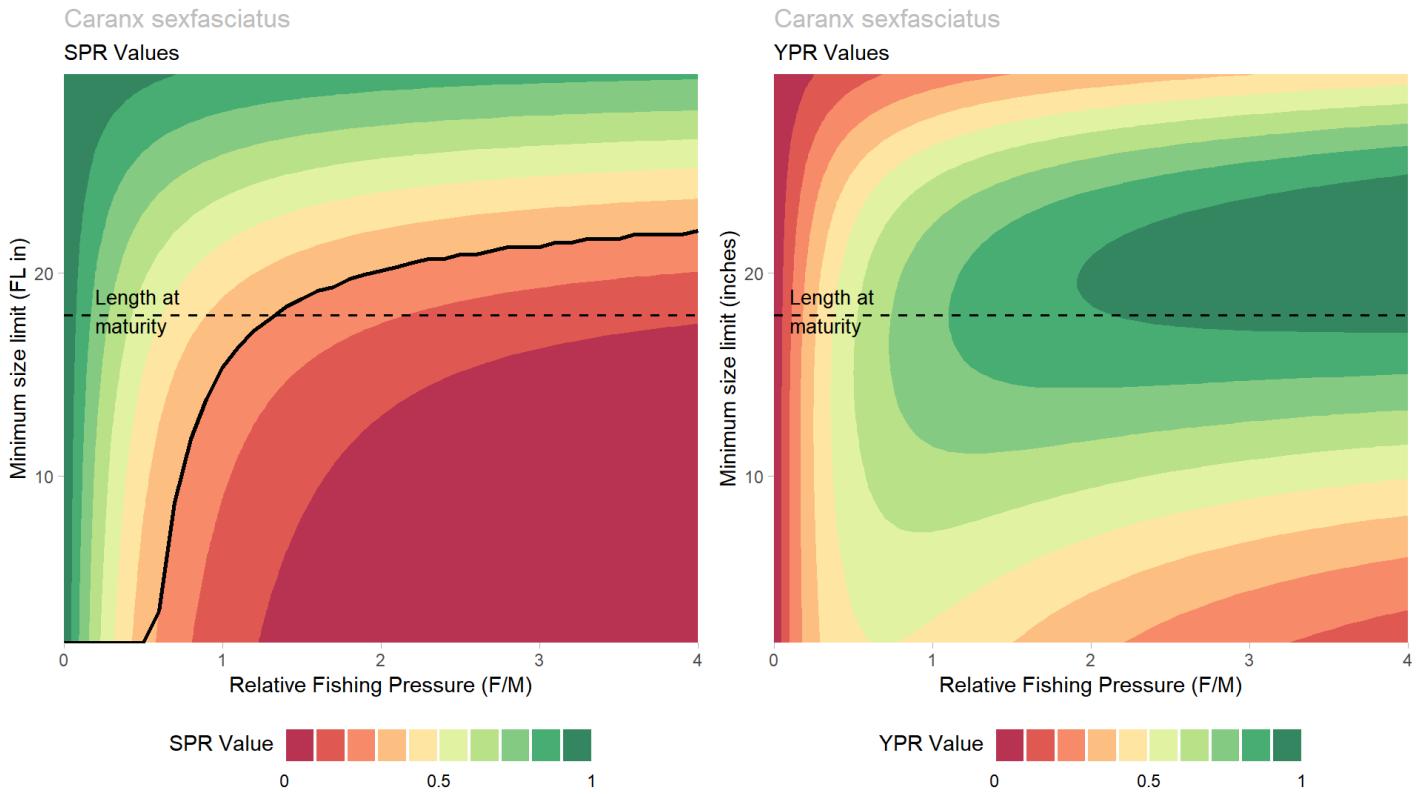
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Caranx sexfasciatus - YPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	410	16.1	<b>0.77</b>	<b>0.86</b>	<b>0.86</b>
1 x L <sub>m</sub>	455	17.9	<b>0.78</b>	<b>0.89</b>	<b>0.94</b>
1.1 x L <sub>m</sub>	501	19.7	<b>0.76</b>	<b>0.91</b>	<b>0.98</b>
1.2 x L <sub>m</sub>	546	21.5	<b>0.73</b>	<b>0.89</b>	<b>1.00</b>
1.3 x L <sub>m</sub>	592	23.3	<b>0.66</b>	<b>0.83</b>	<b>0.95</b>
1.5 x L <sub>m</sub>	682	26.9	<b>0.45</b>	<b>0.60</b>	<b>0.73</b>
Current size limit	254	10.0	<b>0.67</b>	<b>0.63</b>	<b>0.51</b>

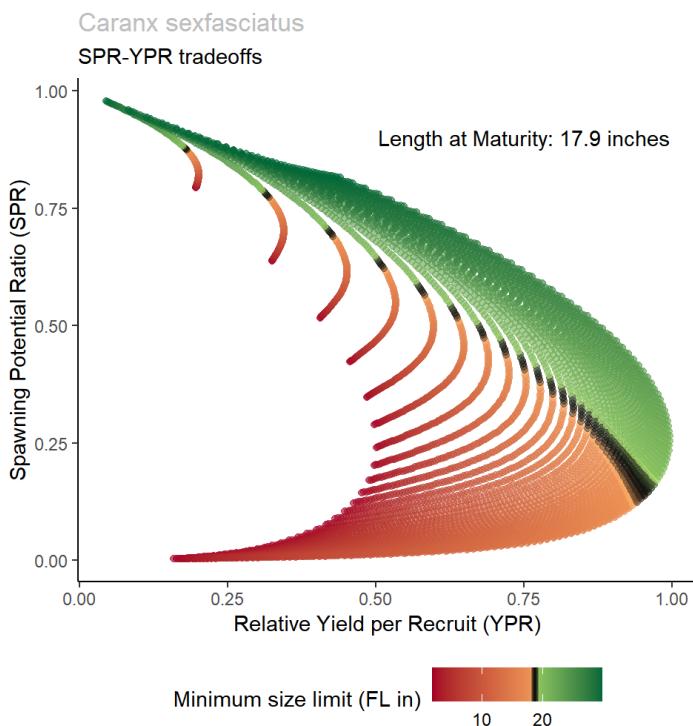
*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

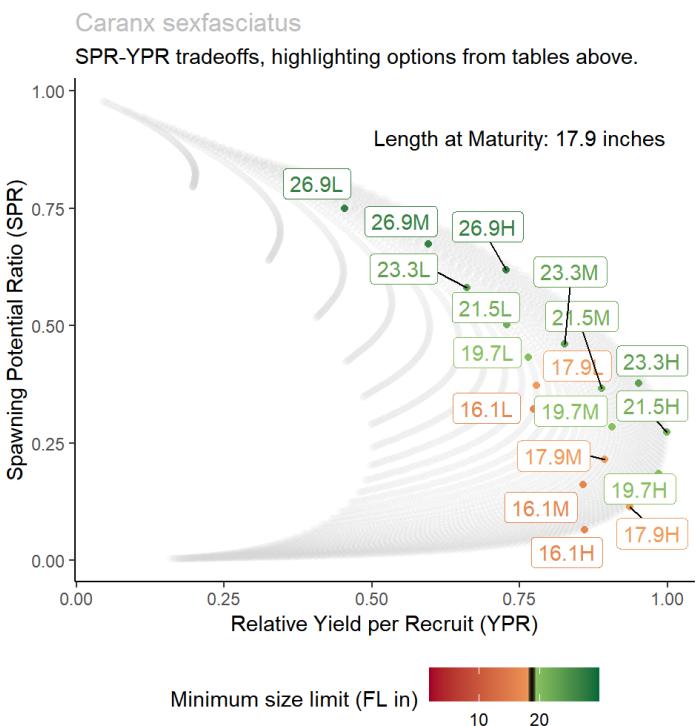


Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: **Elagatis bipinnulata**

**Hawaiian Name:** Kamanu

**Common Name:** Rainbow Runner

**Family:** Jacks

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 930 mm FL

**K (von Bertalanffy growth parameter):** 0.214 per year

**t<sub>0</sub> (von Bertalanffy parameter):** 0

**L<sub>m</sub> (Length at maturity):** 640 mm FL

**L<sub>m</sub> (Length at maturity):** 25 inches FL

**M (natural mortality rate):** 0.25 per year

**Longevity:** 13 years

**M/K:** 1.17

**L<sub>m</sub>/L<sub>oo</sub>:** 0.69

### Elagatis bipinnulata - SPR Values

Option	Minimum Size Limit		Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	576	22.7	0.33	0.17	0.07
1 x L <sub>m</sub>	640	25.2	0.42	0.26	0.15
1.1 x L <sub>m</sub>	704	27.7	0.52	0.39	0.29
1.2 x L <sub>m</sub>	768	30.2	0.65	0.54	0.46
1.3 x L <sub>m</sub>	832	32.8	0.77	0.69	0.64

**Note:**

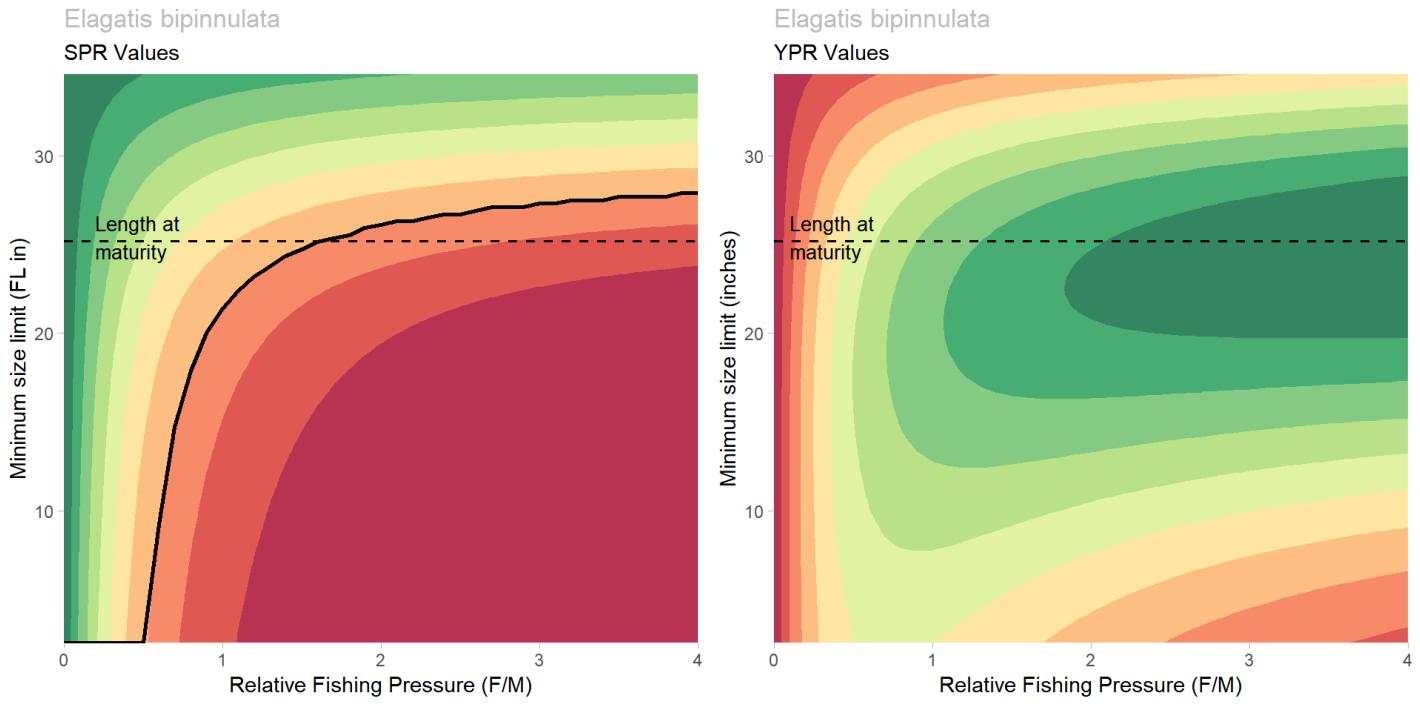
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Elagatis bipinnulata - YPR Values

Option	Minimum Size Limit		Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	576	22.7	0.77	0.91	0.98
1 x L <sub>m</sub>	640	25.2	0.73	0.89	1.00
1.1 x L <sub>m</sub>	704	27.7	0.65	0.82	0.95
1.2 x L <sub>m</sub>	768	30.2	0.52	0.67	0.80
1.3 x L <sub>m</sub>	832	32.8	0.37	0.49	0.61

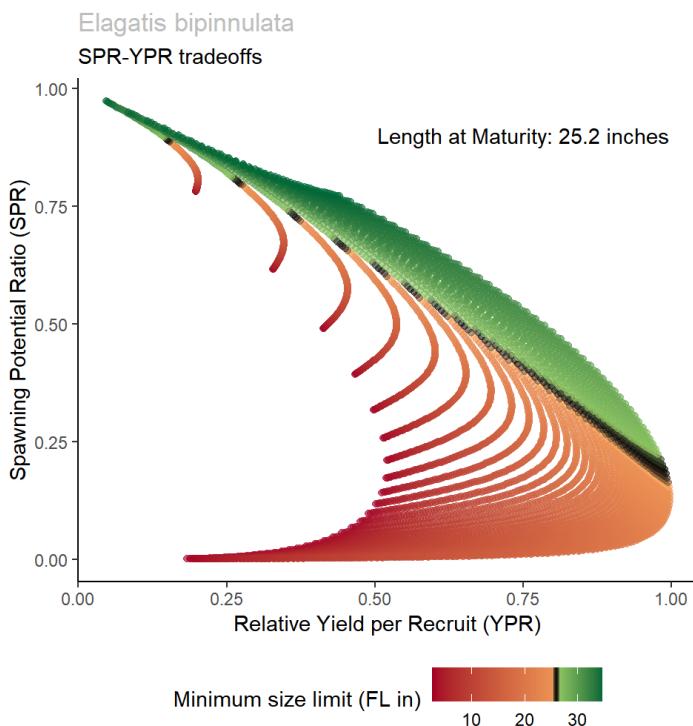
**Note:**

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

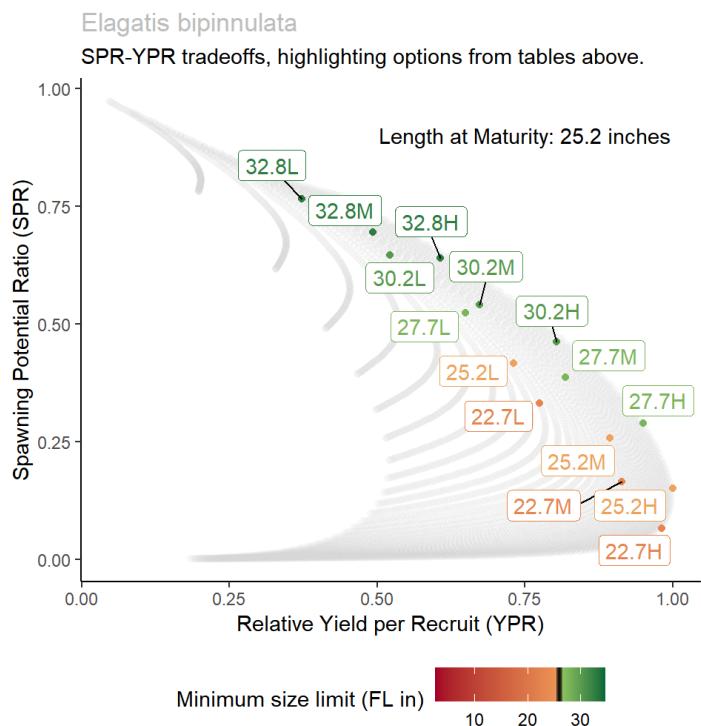


Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: **Pseudocaranx dentex**

**Hawaiian Name:** Butaguchi

**Common Name:** Thick Lipped Jack

**Family:** Jacks

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>00</sub> (von Bertalanffy asymptotic size):** 1232 mm FL

**K (von Bertalanffy growth parameter):** 0.307 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.77

**L<sub>m</sub> (Length at maturity):** 260 mm FL

**L<sub>m</sub> (Length at maturity):** 10 inches FL

**M (natural mortality rate):** 0.46 per year

**Longevity:** 7 years

**M/K:** 1.5

**L<sub>m</sub>/L<sub>00</sub>:** 0.21

### Pseudocaranx dentex - SPR Values

Option	Fishing Pressure (F/M)					
	Minimum Size Limit	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	234	9.2		<b>0.23</b>	<b>0.09</b>	<b>0.03</b>
1 x L <sub>m</sub>	260	10.2		<b>0.24</b>	<b>0.10</b>	<b>0.04</b>
1.1 x L <sub>m</sub>	286	11.3		<b>0.25</b>	<b>0.11</b>	<b>0.04</b>
1.2 x L <sub>m</sub>	312	12.3		<b>0.26</b>	<b>0.12</b>	<b>0.05</b>
1.3 x L <sub>m</sub>	338	13.3		<b>0.27</b>	<b>0.13</b>	<b>0.06</b>
1.5 x L <sub>m</sub>	390	15.4		<b>0.29</b>	<b>0.15</b>	<b>0.07</b>
2 x L <sub>m</sub>	520	20.5		<b>0.36</b>	<b>0.22</b>	<b>0.14</b>

*Note:*

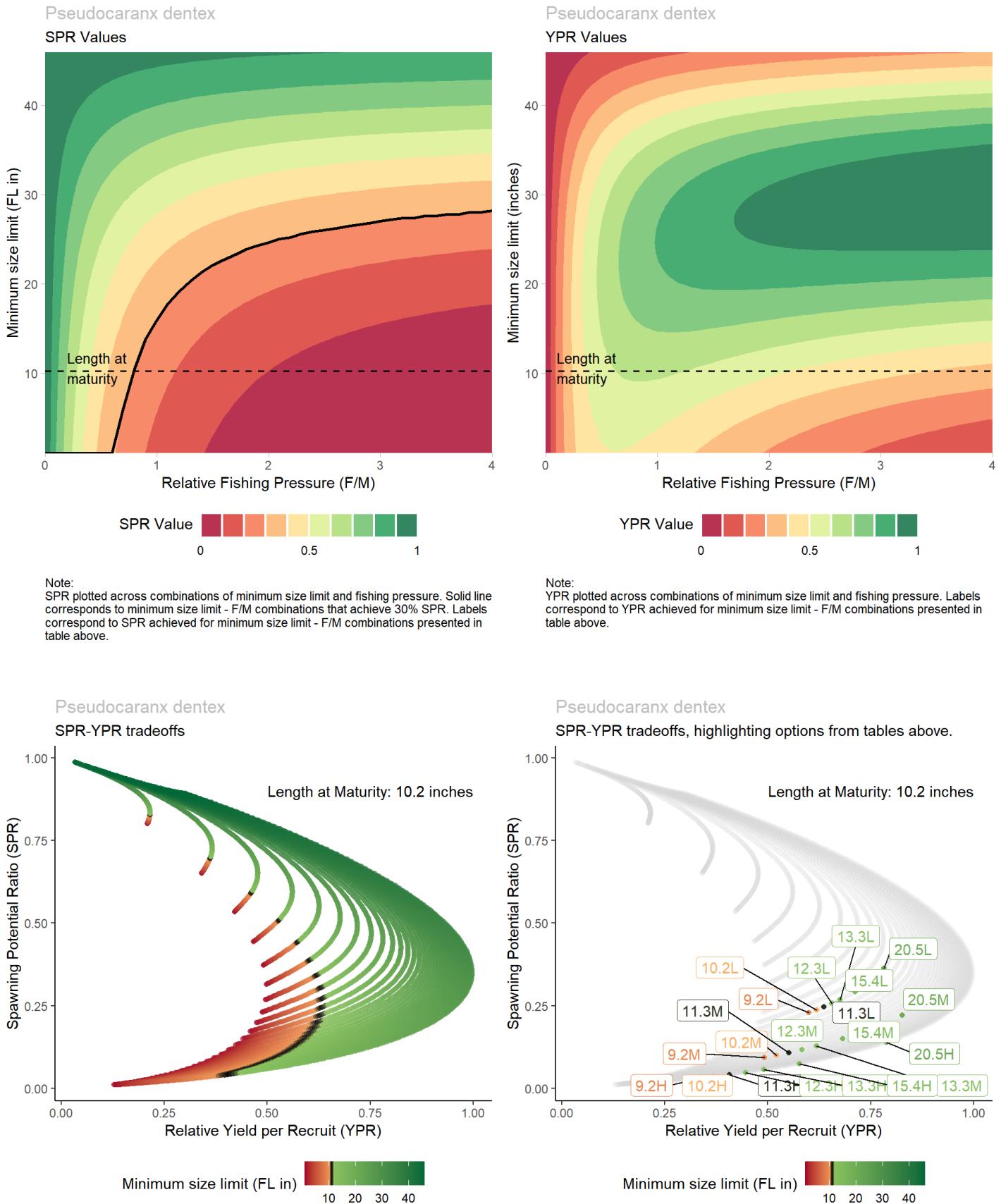
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Pseudocaranx dentex - YPR Values

Option	Fishing Pressure (F/M)					
	Minimum Size Limit	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	234	9.2		<b>0.60</b>	<b>0.49</b>	<b>0.33</b>
1 x L <sub>m</sub>	260	10.2		<b>0.62</b>	<b>0.52</b>	<b>0.37</b>
1.1 x L <sub>m</sub>	286	11.3		<b>0.64</b>	<b>0.55</b>	<b>0.41</b>
1.2 x L <sub>m</sub>	312	12.3		<b>0.66</b>	<b>0.58</b>	<b>0.45</b>
1.3 x L <sub>m</sub>	338	13.3		<b>0.68</b>	<b>0.62</b>	<b>0.49</b>
1.5 x L <sub>m</sub>	390	15.4		<b>0.71</b>	<b>0.68</b>	<b>0.58</b>
2 x L <sub>m</sub>	520	20.5		<b>0.78</b>	<b>0.83</b>	<b>0.79</b>

*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



## Species: **Seriola dumerili**

**Hawaiian Name:** Kahala

**Common Name:** Greater Amberjack

**Family:** Jacks

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>00</sub> (von Bertalanffy asymptotic size):** 1118 mm FL

**K (von Bertalanffy growth parameter):** 0.2272 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.7931

**L<sub>m</sub> (Length at maturity):** 799 mm FL

**L<sub>m</sub> (Length at maturity):** 31 inches FL

**M (natural mortality rate):** 0.21 per year

**Longevity:** 15 years

**M/K:** 0.92

**L<sub>m</sub>/L<sub>00</sub>:** 0.71

### Seriola dumerili - SPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	719	28.3	<b>0.35</b>	<b>0.18</b>	<b>0.07</b>
1 x L <sub>m</sub>	799	31.5	<b>0.43</b>	<b>0.27</b>	<b>0.16</b>
1.1 x L <sub>m</sub>	879	34.6	<b>0.53</b>	<b>0.39</b>	<b>0.29</b>
1.2 x L <sub>m</sub>	959	37.8	<b>0.66</b>	<b>0.55</b>	<b>0.47</b>
1.3 x L <sub>m</sub>	1039	40.9	<b>0.79</b>	<b>0.72</b>	<b>0.67</b>

*Note:*

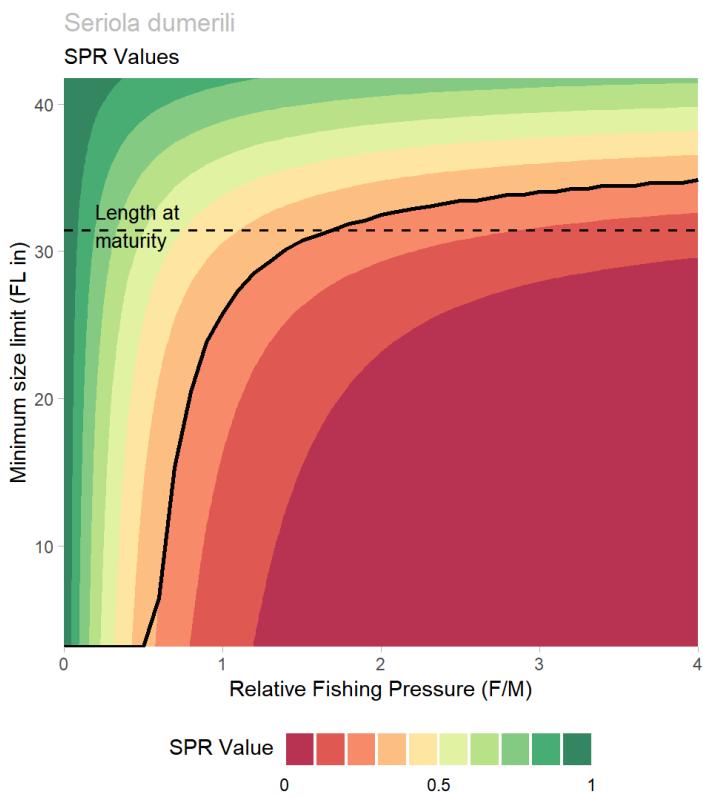
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Seriola dumerili - YPR Values

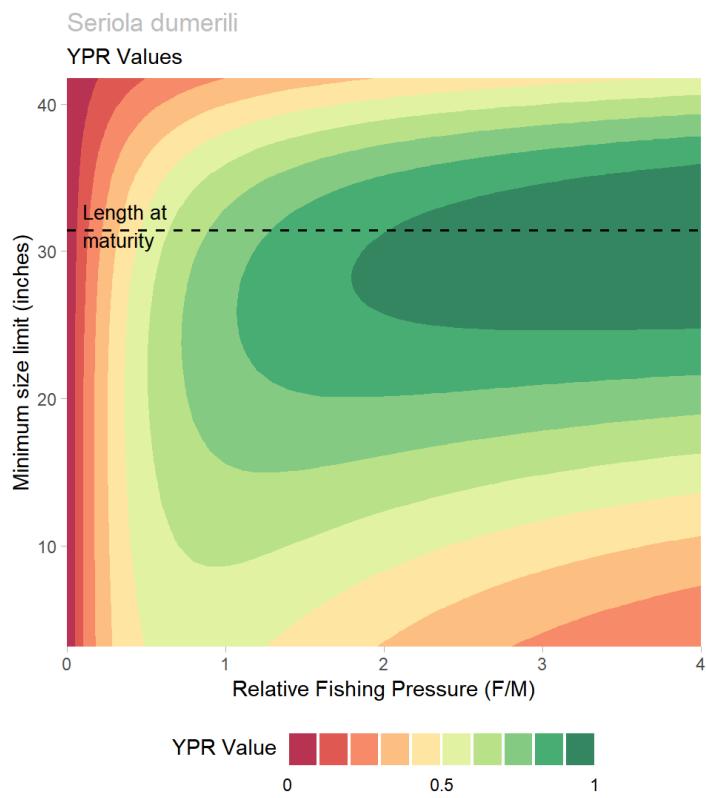
Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	719	28.3	<b>0.77</b>	<b>0.92</b>	<b>0.98</b>
1 x L <sub>m</sub>	799	31.5	<b>0.73</b>	<b>0.90</b>	<b>1.00</b>
1.1 x L <sub>m</sub>	879	34.6	<b>0.65</b>	<b>0.82</b>	<b>0.95</b>
1.2 x L <sub>m</sub>	959	37.8	<b>0.51</b>	<b>0.67</b>	<b>0.80</b>
1.3 x L <sub>m</sub>	1039	40.9	<b>0.35</b>	<b>0.46</b>	<b>0.57</b>

*Note:*

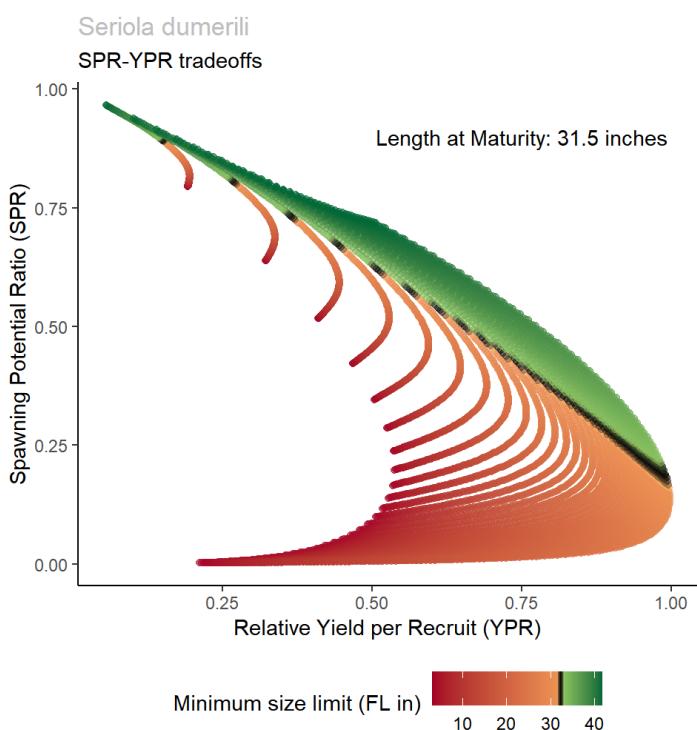
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



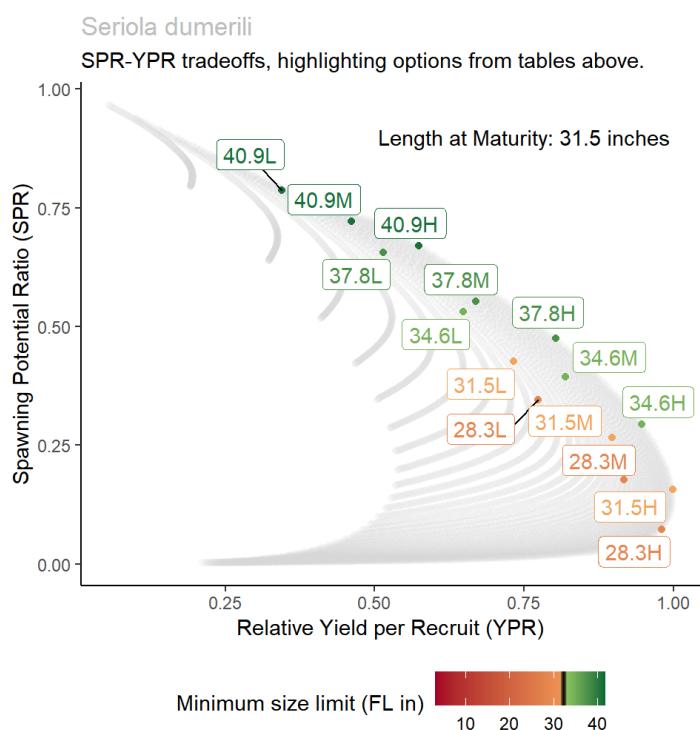
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

# Holocentridae - Squirrelfishes

## Species: *Myripristis berndti*

**Hawaiian Name:** 'U'u

**Common Name:** Bigscale Soldierfish

**Family:** Squirrelfishes

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 249 mm FL

**K (von Bertalanffy growth parameter):** 0.1475 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -4.4786

**L<sub>m</sub> (Length at maturity):** 161 mm FL

**L<sub>m</sub> (Length at maturity):** 6 inches FL

**M (natural mortality rate):** 0.12 per year

**Longevity:** 27 years

**M/K:** 0.81

**L<sub>m</sub>/L<sub>oo</sub>:** 0.65

### *Myripristis berndti* - SPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	145	5.7	<b>0.36</b>	<b>0.19</b>	<b>0.09</b>
1 x L <sub>m</sub>	161	6.3	<b>0.41</b>	<b>0.25</b>	<b>0.14</b>
1.1 x L <sub>m</sub>	177	7.0	<b>0.47</b>	<b>0.32</b>	<b>0.22</b>
1.2 x L <sub>m</sub>	193	7.6	<b>0.56</b>	<b>0.43</b>	<b>0.34</b>
1.3 x L <sub>m</sub>	209	8.2	<b>0.66</b>	<b>0.56</b>	<b>0.48</b>

*Note:*

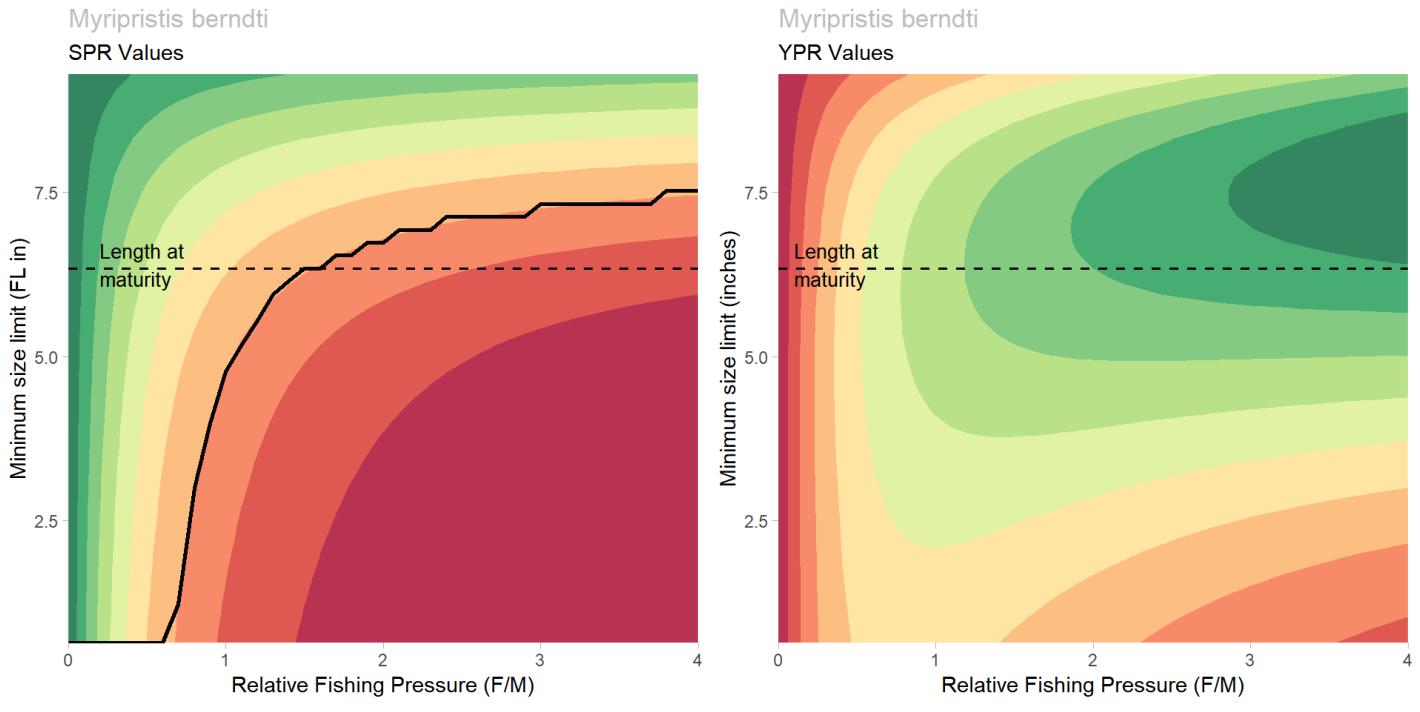
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### *Myripristis berndti* - YPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	145	5.7	<b>0.66</b>	<b>0.77</b>	<b>0.81</b>
1 x L <sub>m</sub>	161	6.3	<b>0.66</b>	<b>0.80</b>	<b>0.89</b>
1.1 x L <sub>m</sub>	177	7.0	<b>0.64</b>	<b>0.80</b>	<b>0.93</b>
1.2 x L <sub>m</sub>	193	7.6	<b>0.60</b>	<b>0.78</b>	<b>0.96</b>
1.3 x L <sub>m</sub>	209	8.2	<b>0.53</b>	<b>0.73</b>	<b>0.97</b>

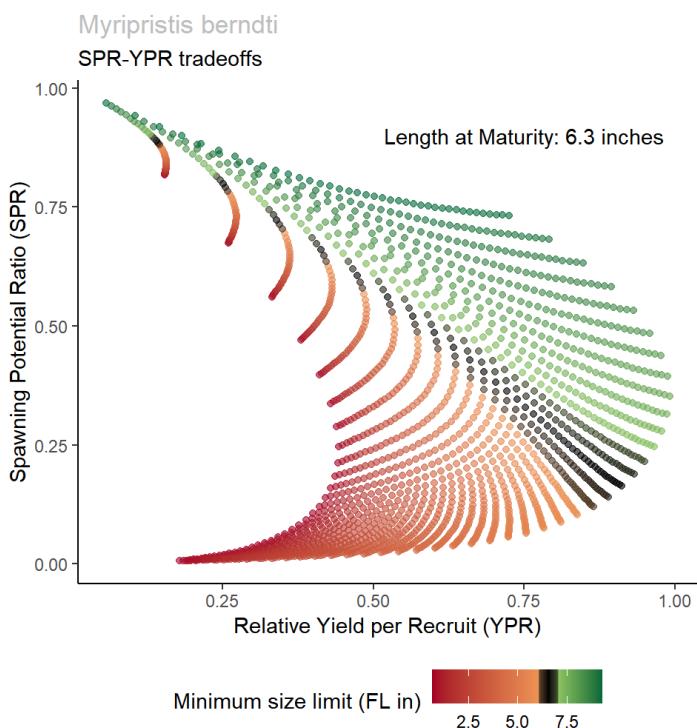
*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

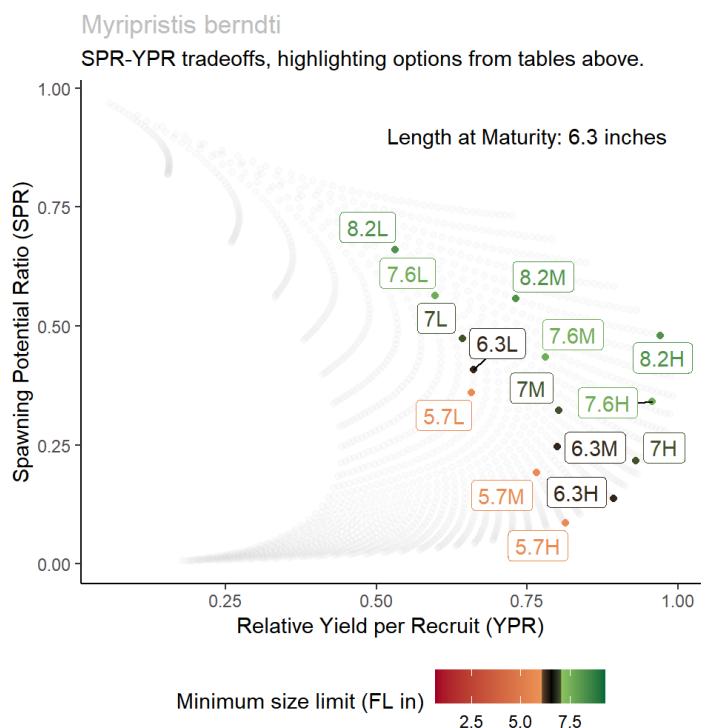


Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

# Lutjanidae - Snappers

## Species: *Aprion virescens*

**Hawaiian Name:** Uku

**Common Name:** Green Jobfish

**Family:** Snappers

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 765 mm FL

**K (von Bertalanffy growth parameter):** 0.136 per year

**t<sub>0</sub> (von Bertalanffy parameter):** 0

**L<sub>m</sub> (Length at maturity):** 450 mm FL

**L<sub>m</sub> (Length at maturity):** 18 inches FL

**M (natural mortality rate):** 0.1 per year

**Longevity:** 32 years

**M/K:** 0.74

**L<sub>m</sub>/L<sub>oo</sub>:** 0.59

### *Aprion virescens* - SPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	405	15.9	0.35	0.18	0.07
1 x L <sub>m</sub>	450	17.7	0.38	0.22	0.11
1.1 x L <sub>m</sub>	495	19.5	0.42	0.27	0.16
1.2 x L <sub>m</sub>	540	21.3	0.48	0.33	0.22
1.3 x L <sub>m</sub>	585	23.0	0.54	0.40	0.30
1.5 x L <sub>m</sub>	675	26.6	0.70	0.61	0.54

*Note:*

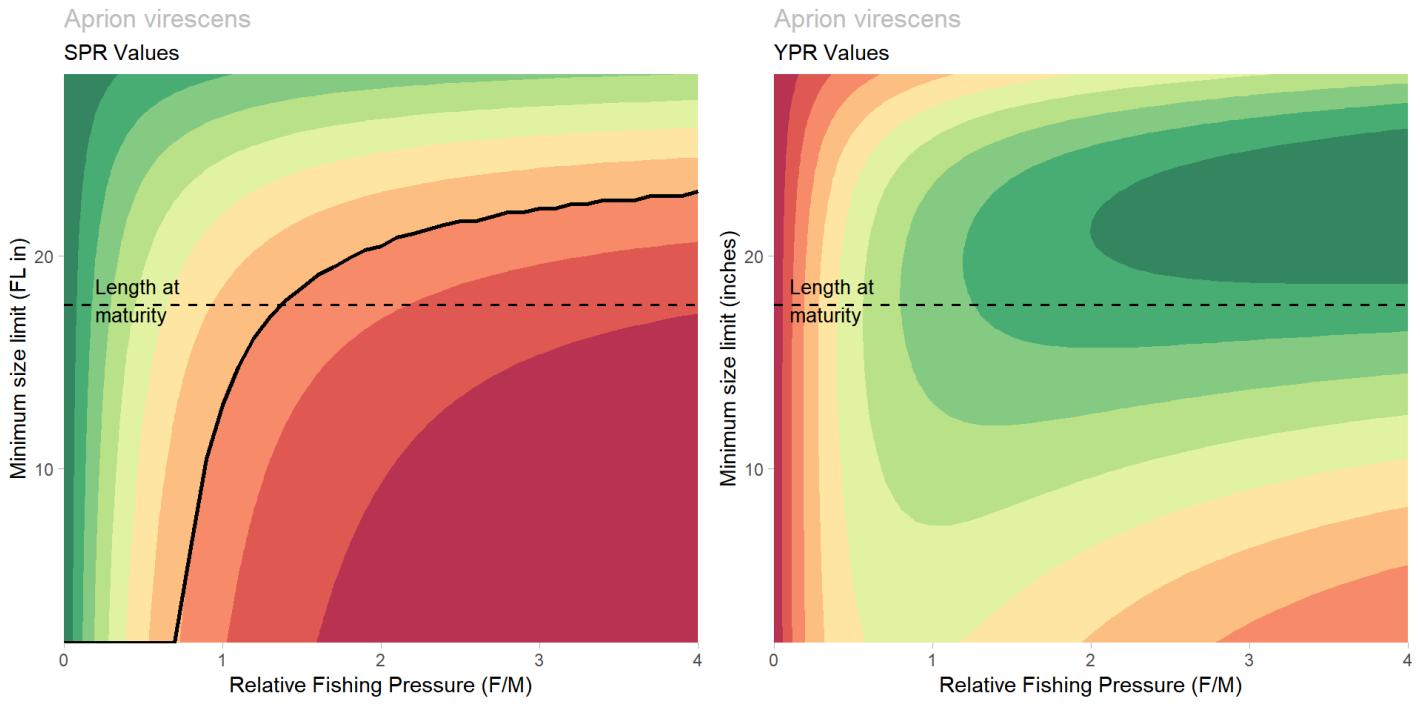
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### *Aprion virescens* - YPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	405	15.9	0.74	0.81	0.77
1 x L <sub>m</sub>	450	17.7	0.75	0.85	0.86
1.1 x L <sub>m</sub>	495	19.5	0.76	0.89	0.93
1.2 x L <sub>m</sub>	540	21.3	0.75	0.90	0.98
1.3 x L <sub>m</sub>	585	23.0	0.71	0.88	1.00
1.5 x L <sub>m</sub>	675	26.6	0.53	0.70	0.86

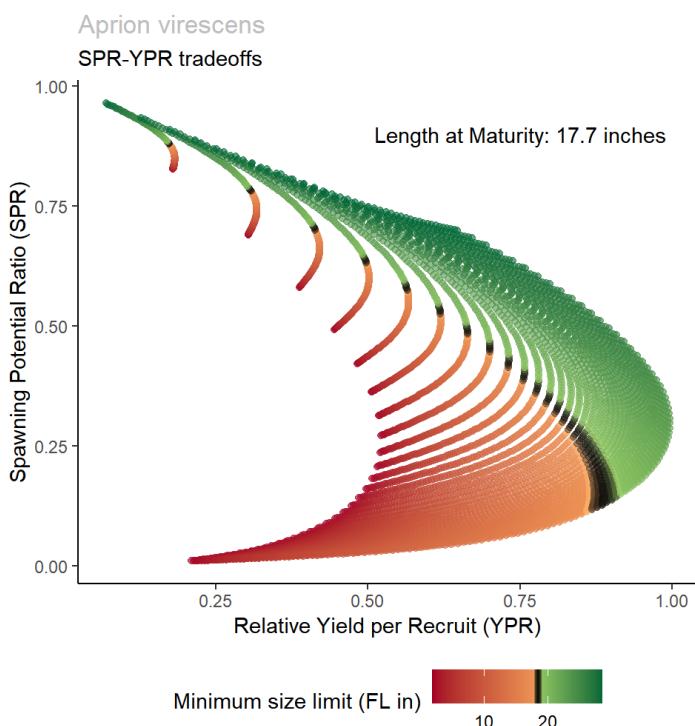
*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

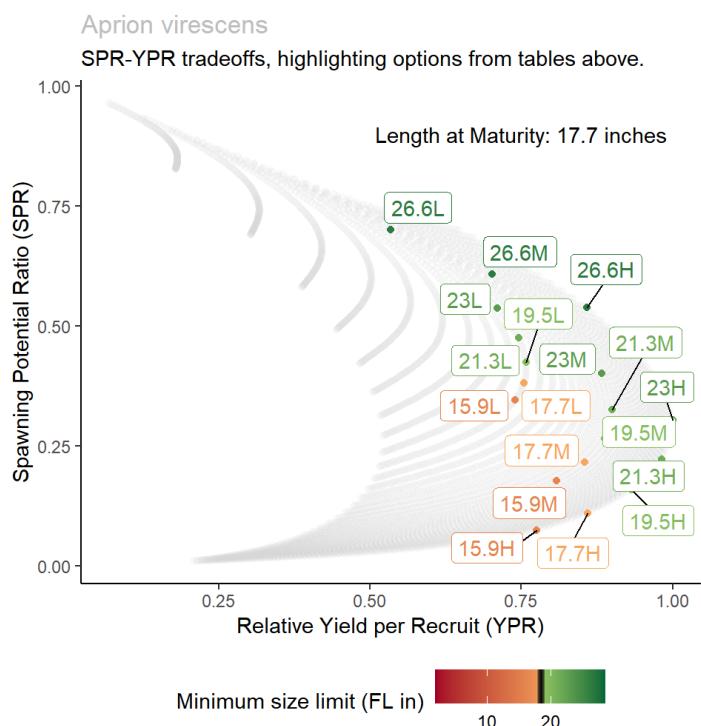


Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: Lutjanus kasmira

**Hawaiian Name:** Ta'ape

**Common Name:** Bluestripe Snapper

**Family:** Snappers

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>00</sub> (von Bertalanffy asymptotic size):** 330 mm FL

**K (von Bertalanffy growth parameter):** 0.29 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -1.37

**L<sub>m</sub> (Length at maturity):** 194 mm FL

**L<sub>m</sub> (Length at maturity):** 8 inches FL

**M (natural mortality rate):** 0.4 per year

**Longevity:** 8 years

**M/K:** 1.38

**L<sub>m</sub>/L<sub>00</sub>:** 0.59

### Lutjanus kasmira - SPR Values

Option	Minimum Size Limit		Fishing Pressure (F/M)		
	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	175	6.9	0.32	0.16	0.07
1 x L <sub>m</sub>	194	7.6	0.38	0.23	0.13
1.1 x L <sub>m</sub>	213	8.4	0.46	0.32	0.22
1.2 x L <sub>m</sub>	233	9.2	0.55	0.42	0.34
1.3 x L <sub>m</sub>	252	9.9	0.63	0.52	0.45
1.5 x L <sub>m</sub>	291	11.5	0.82	0.76	0.72

*Note:*

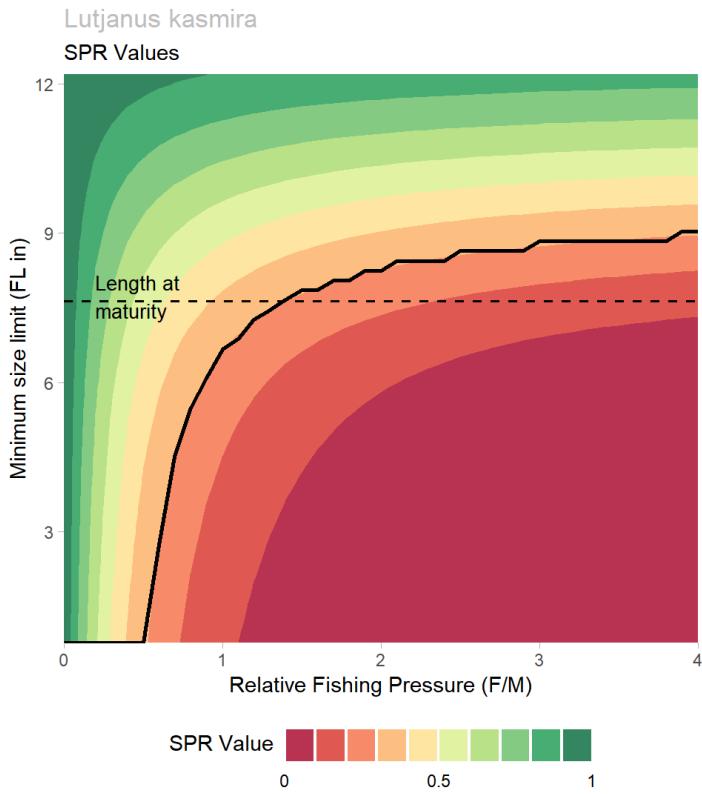
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Lutjanus kasmira - YPR Values

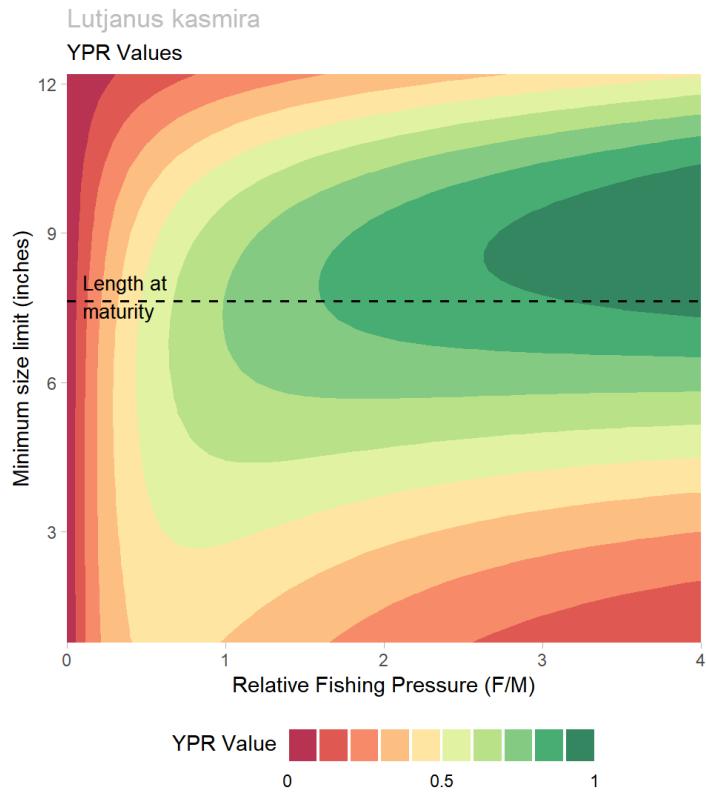
Option	Minimum Size Limit		Fishing Pressure (F/M)		
	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	175	6.9	0.70	0.80	0.85
1 x L <sub>m</sub>	194	7.6	0.70	0.84	0.93
1.1 x L <sub>m</sub>	213	8.4	0.68	0.83	0.96
1.2 x L <sub>m</sub>	233	9.2	0.63	0.80	0.96
1.3 x L <sub>m</sub>	252	9.9	0.56	0.74	0.91
1.5 x L <sub>m</sub>	291	11.5	0.35	0.50	0.70

*Note:*

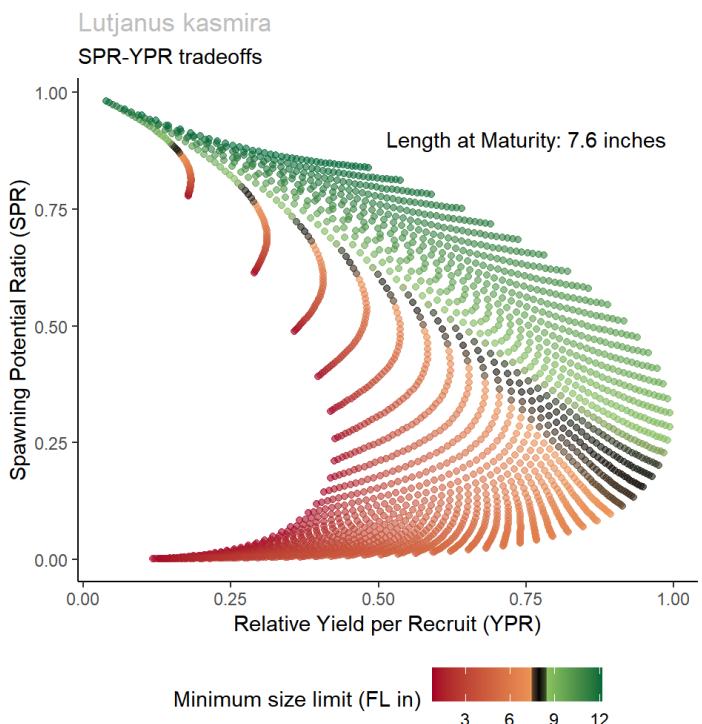
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



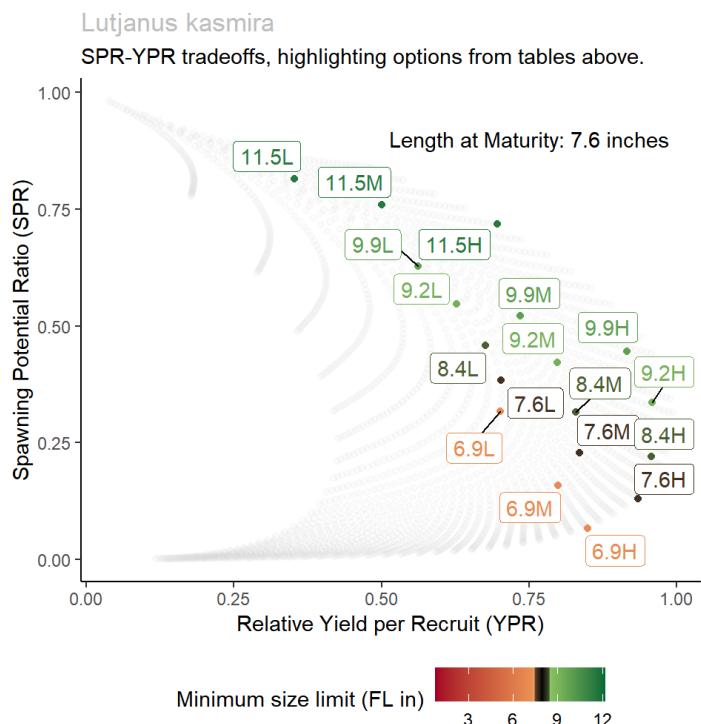
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

# Mugilidae - Mullets

## Species: Mugil cephalus

**Hawaiian Name:** Ama'ama

**Common Name:** Striped Mullet

**Family:** Mullets

**Current Minimum Size Limit (FL):** 11 inches

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 554 mm FL

**K (von Bertalanffy growth parameter):** 0.3 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.14

**L<sub>m</sub> (Length at maturity):** 296 mm FL

**L<sub>m</sub> (Length at maturity):** 12 inches FL

**M (natural mortality rate):** 0.25 per year

**Longevity:** 13 years

**M/K:** 0.83

**L<sub>m</sub>/L<sub>oo</sub>:** 0.53

### Mugil cephalus - SPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	266	10.5	<b>0.33</b>	<b>0.16</b>	<b>0.07</b>
1 x L <sub>m</sub>	296	11.7	<b>0.36</b>	<b>0.20</b>	<b>0.10</b>
1.1 x L <sub>m</sub>	326	12.8	<b>0.40</b>	<b>0.24</b>	<b>0.14</b>
1.2 x L <sub>m</sub>	355	14.0	<b>0.44</b>	<b>0.29</b>	<b>0.18</b>
1.3 x L <sub>m</sub>	385	15.2	<b>0.49</b>	<b>0.34</b>	<b>0.25</b>
1.5 x L <sub>m</sub>	444	17.5	<b>0.61</b>	<b>0.50</b>	<b>0.41</b>
Current size limit	279	11.0	<b>0.34</b>	<b>0.18</b>	<b>0.08</b>

**Note:**

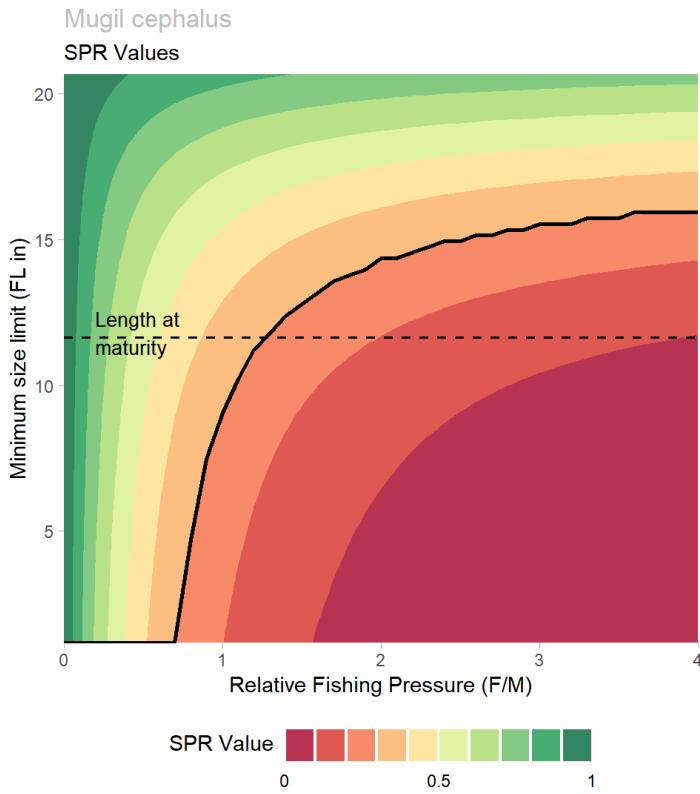
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Mugil cephalus - YPR Values

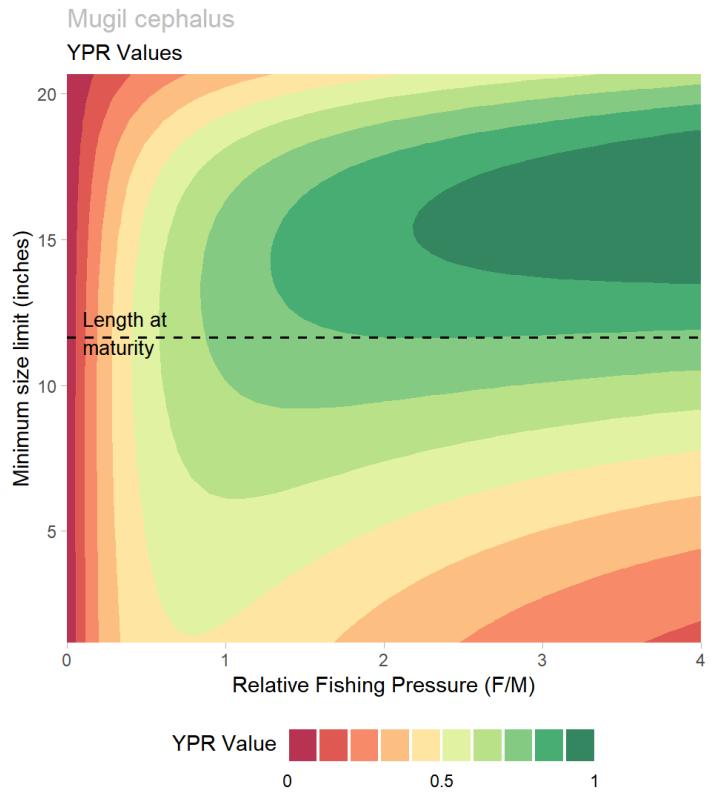
Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	266	10.5	<b>0.71</b>	<b>0.75</b>	<b>0.69</b>
1 x L <sub>m</sub>	296	11.7	<b>0.73</b>	<b>0.80</b>	<b>0.78</b>
1.1 x L <sub>m</sub>	326	12.8	<b>0.74</b>	<b>0.84</b>	<b>0.86</b>
1.2 x L <sub>m</sub>	355	14.0	<b>0.74</b>	<b>0.87</b>	<b>0.93</b>
1.3 x L <sub>m</sub>	385	15.2	<b>0.73</b>	<b>0.89</b>	<b>0.98</b>
1.5 x L <sub>m</sub>	444	17.5	<b>0.64</b>	<b>0.83</b>	<b>0.98</b>
Current size limit	279	11.0	<b>0.72</b>	<b>0.77</b>	<b>0.73</b>

**Note:**

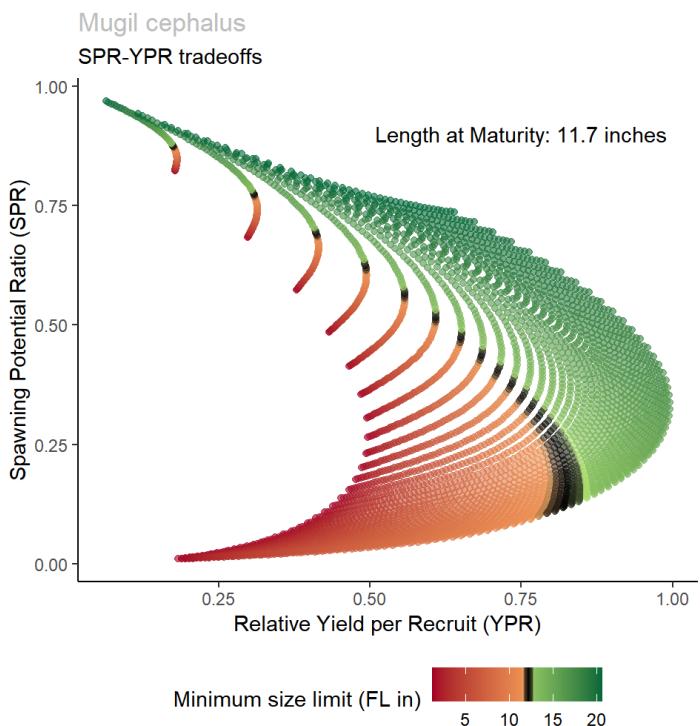
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



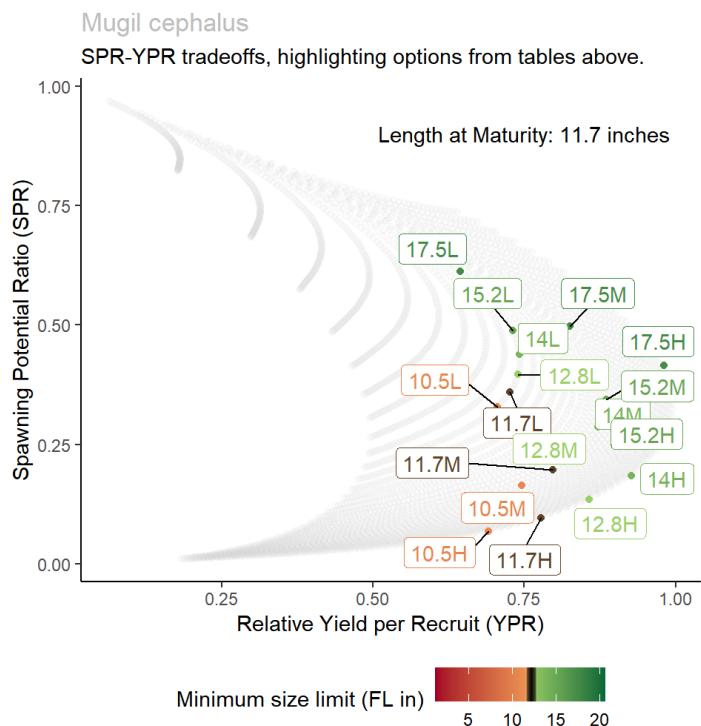
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

# Mullidae - Goatfishes

## Species: *Mulloidichthys flavolineatus*

**Hawaiian Name:** Weke'a

**Common Name:** Yellowstripe Goatfish

**Family:** Goatfishes

**Current Minimum Size Limit (FL):** 7 inches

### Life History Parameters

**L<sub>0</sub> (von Bertalanffy asymptotic size):** 342 mm FL

**K (von Bertalanffy growth parameter):** 0.564 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.36

**L<sub>m</sub> (Length at maturity):** 183 mm FL

**L<sub>m</sub> (Length at maturity):** 7 inches FL

**M (natural mortality rate):** 0.54 per year

**Longevity:** 6 years

**M/K:** 0.96

**L<sub>m</sub>/L<sub>0</sub>:** 0.54

### *Mulloidichthys flavolineatus* - SPR

#### Values

Option	Fishing Pressure				
	Minimum Size Limit	(F/M)			
mm	inches	Low	Med	High	
0.9 x L <sub>m</sub>	165	6.5	<b>0.32</b>	<b>0.16</b>	<b>0.07</b>
1 x L <sub>m</sub>	183	7.2	<b>0.36</b>	<b>0.20</b>	<b>0.10</b>
1.1 x L <sub>m</sub>	201	7.9	<b>0.40</b>	<b>0.24</b>	<b>0.14</b>
1.2 x L <sub>m</sub>	220	8.7	<b>0.45</b>	<b>0.30</b>	<b>0.20</b>
1.3 x L <sub>m</sub>	238	9.4	<b>0.51</b>	<b>0.37</b>	<b>0.27</b>
1.5 x L <sub>m</sub>	274	10.8	<b>0.64</b>	<b>0.53</b>	<b>0.46</b>
Current size limit	178	7.0	<b>0.35</b>	<b>0.19</b>	<b>0.09</b>

*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

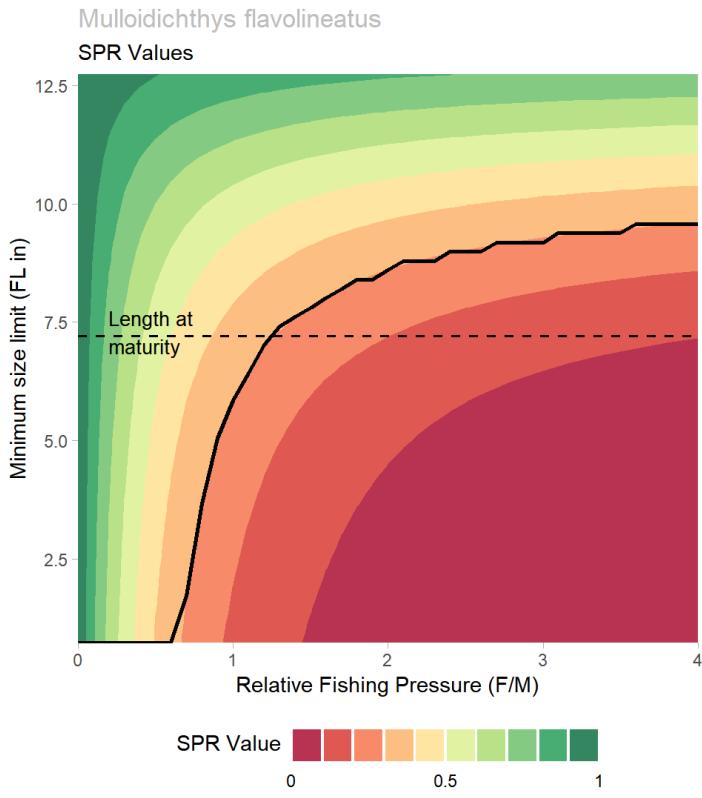
### *Mulloidichthys flavolineatus* - YPR

#### Values

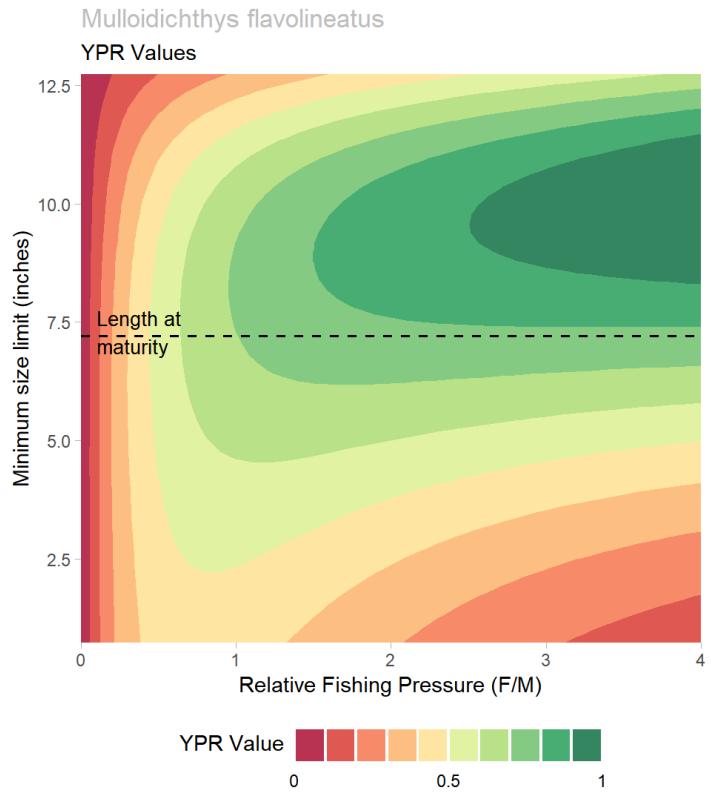
Option	Fishing Pressure				
	Minimum Size Limit	(F/M)			
mm	inches	Low	Med	High	
0.9 x L <sub>m</sub>	165	6.5	<b>0.68</b>	<b>0.72</b>	<b>0.69</b>
1 x L <sub>m</sub>	183	7.2	<b>0.70</b>	<b>0.77</b>	<b>0.77</b>
1.1 x L <sub>m</sub>	201	7.9	<b>0.71</b>	<b>0.82</b>	<b>0.86</b>
1.2 x L <sub>m</sub>	220	8.7	<b>0.71</b>	<b>0.85</b>	<b>0.94</b>
1.3 x L <sub>m</sub>	238	9.4	<b>0.69</b>	<b>0.85</b>	<b>0.97</b>
1.5 x L <sub>m</sub>	274	10.8	<b>0.61</b>	<b>0.80</b>	<b>1.00</b>
Current size limit	178	7.0	<b>0.69</b>	<b>0.76</b>	<b>0.75</b>

*Note:*

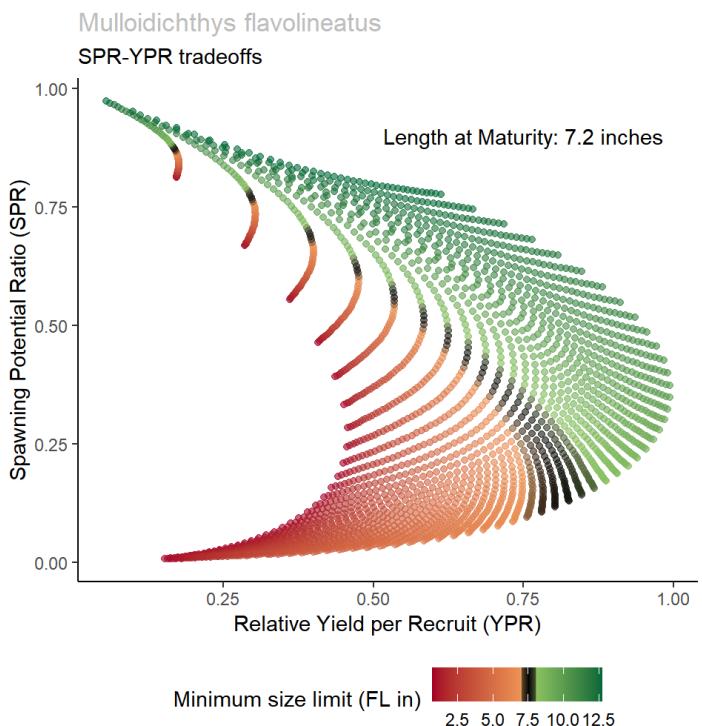
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



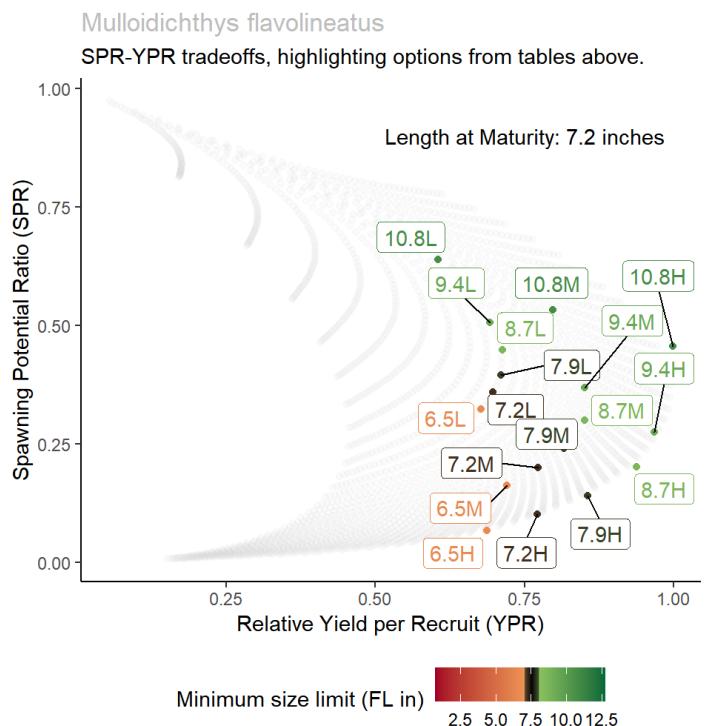
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: **Mulloidichthys vanicolensis**

**Hawaiian Name:** Weke 'ula

**Common Name:** Yellowfin Goatfish

**Family:** Goatfishes

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 227 mm FL

**K (von Bertalanffy growth parameter):** 1.3 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -1.1

**L<sub>m</sub> (Length at maturity):** 175 mm FL

**L<sub>m</sub> (Length at maturity):** 7 inches FL

**M (natural mortality rate):** 0.64 per year

**Longevity:** 5 years

**M/K:** 0.49

**L<sub>m</sub>/L<sub>oo</sub>:** 0.77

### Mulloidichthys vanicolensis - SPR

#### Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	158	6.2	<b>0.40</b>	<b>0.23</b>	<b>0.11</b>
1 x L <sub>m</sub>	175	6.9	<b>0.46</b>	<b>0.30</b>	<b>0.18</b>
1.1 x L <sub>m</sub>	193	7.6	<b>0.58</b>	<b>0.44</b>	<b>0.34</b>
1.2 x L <sub>m</sub>	210	8.3	<b>0.70</b>	<b>0.61</b>	<b>0.54</b>

*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

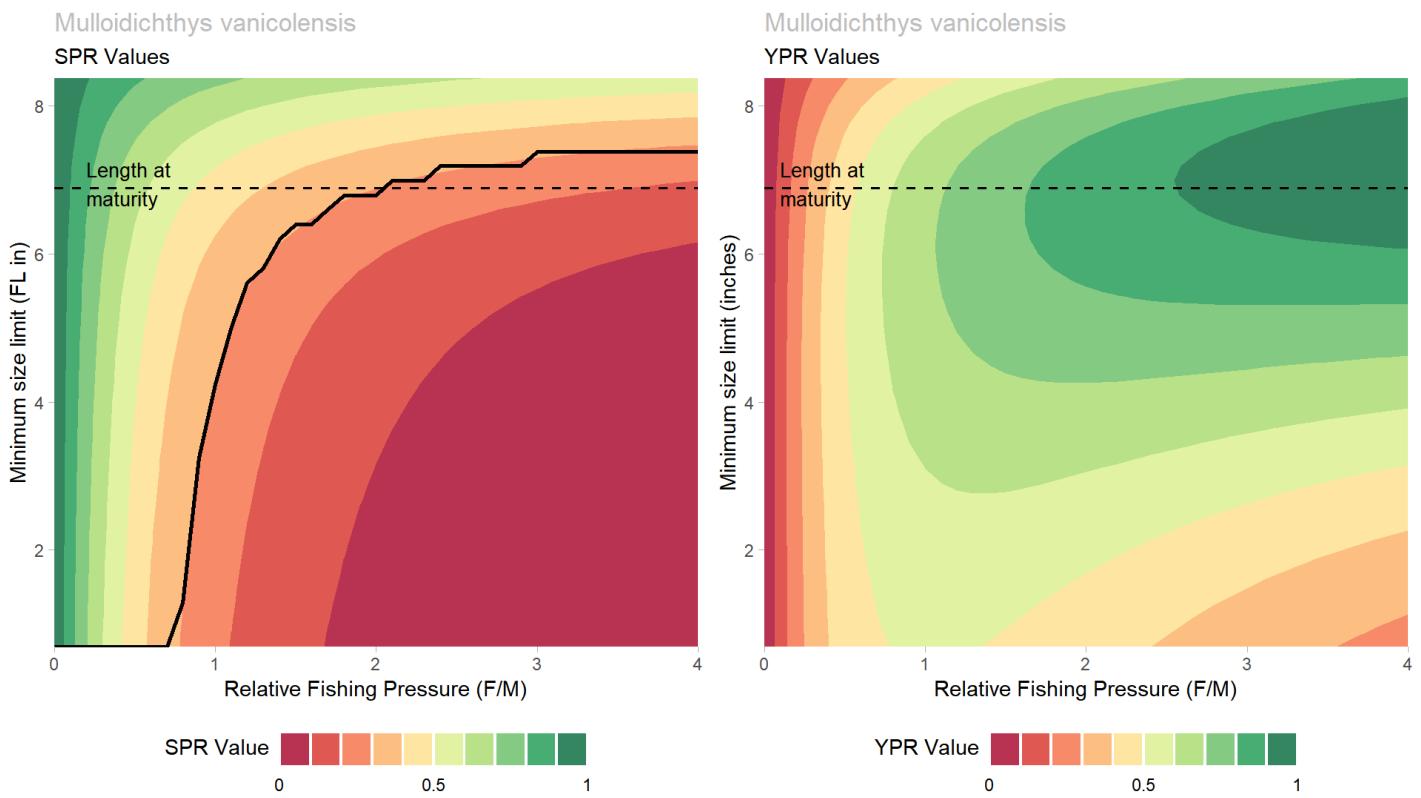
### Mulloidichthys vanicolensis - YPR

#### Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	158	6.2	<b>0.69</b>	<b>0.84</b>	<b>0.94</b>
1 x L <sub>m</sub>	175	6.9	<b>0.68</b>	<b>0.87</b>	<b>1.00</b>
1.1 x L <sub>m</sub>	193	7.6	<b>0.60</b>	<b>0.81</b>	<b>1.00</b>
1.2 x L <sub>m</sub>	210	8.3	<b>0.50</b>	<b>0.73</b>	<b>1.00</b>

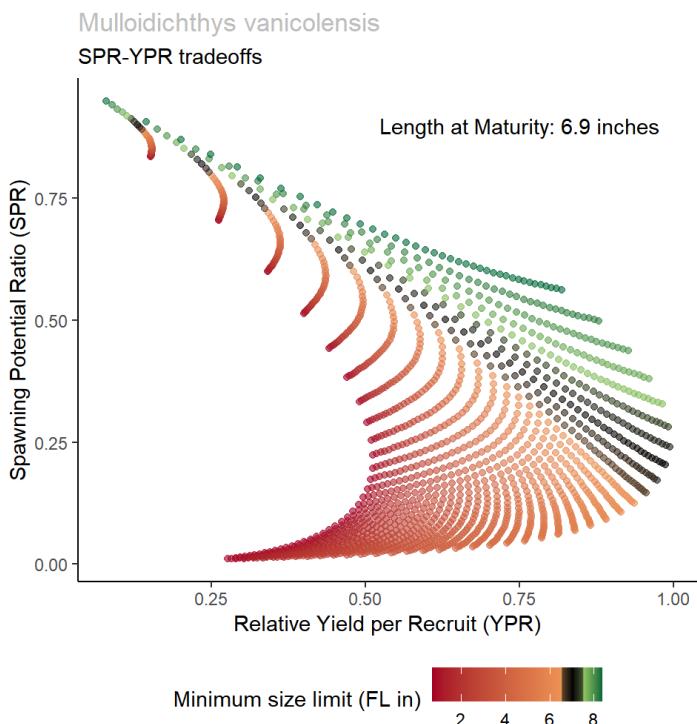
*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

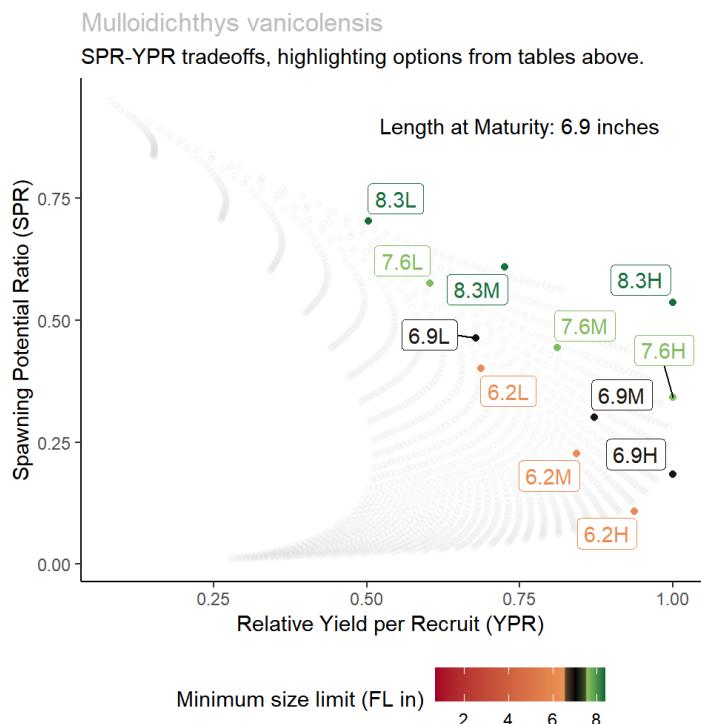


Note:  
 SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

Note:  
 YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
 All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
 All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

# Species: Parupeneus multifasciatus

**Hawaiian Name:** Moano

**Common Name:** Manybar Goatfish

**Family:** Goatfishes

**Current Minimum Size Limit (FL):** 7 inches

## Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 303 mm FL

**K (von Bertalanffy growth parameter):** 0.7556 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.135

**L<sub>m</sub> (Length at maturity):** 145 mm FL

**L<sub>m</sub> (Length at maturity):** 6 inches FL

**M (natural mortality rate):** 0.64 per year

**Longevity:** 5 years

**M/K:** 0.85

**L<sub>m</sub>/L<sub>oo</sub>:** 0.48

## Parupeneus multifasciatus - SPR

### Values

Option	Minimum Size Limit			Fishing Pressure (F/M)		
	mm	inches		Low	Med	High
0.9 x L <sub>m</sub>	130	5.1		<b>0.31</b>	<b>0.15</b>	<b>0.06</b>
1 x L <sub>m</sub>	145	5.7		<b>0.34</b>	<b>0.18</b>	<b>0.08</b>
1.1 x L <sub>m</sub>	160	6.3		<b>0.37</b>	<b>0.21</b>	<b>0.11</b>
1.2 x L <sub>m</sub>	174	6.9		<b>0.40</b>	<b>0.25</b>	<b>0.15</b>
1.3 x L <sub>m</sub>	188	7.4		<b>0.44</b>	<b>0.29</b>	<b>0.19</b>
1.5 x L <sub>m</sub>	218	8.6		<b>0.53</b>	<b>0.40</b>	<b>0.31</b>
Current size limit	178	7.0		<b>0.41</b>	<b>0.26</b>	<b>0.16</b>

#### Note:

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

## Parupeneus multifasciatus - YPR

### Values

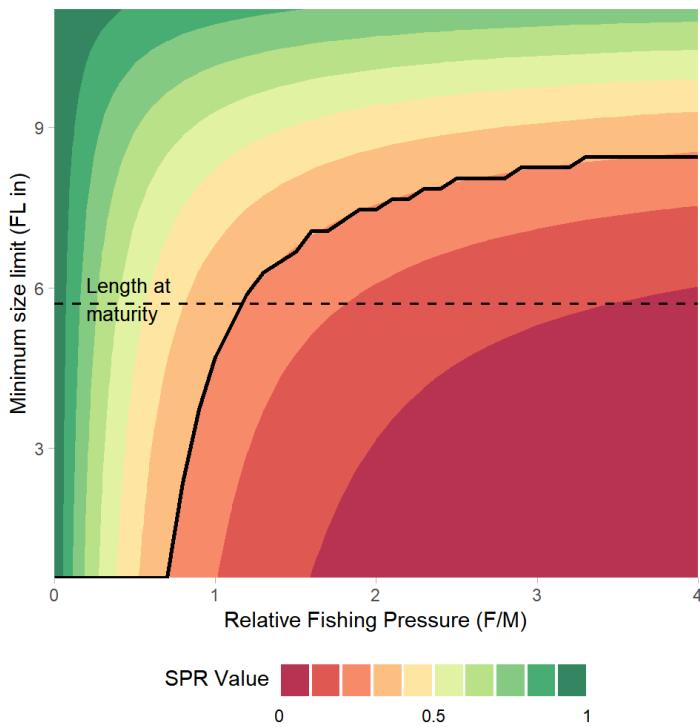
Option	Minimum Size Limit			Fishing Pressure (F/M)		
	mm	inches		Low	Med	High
0.9 x L <sub>m</sub>	130	5.1		<b>0.62</b>	<b>0.63</b>	<b>0.56</b>
1 x L <sub>m</sub>	145	5.7		<b>0.64</b>	<b>0.68</b>	<b>0.64</b>
1.1 x L <sub>m</sub>	160	6.3		<b>0.66</b>	<b>0.73</b>	<b>0.72</b>
1.2 x L <sub>m</sub>	174	6.9		<b>0.68</b>	<b>0.77</b>	<b>0.80</b>
1.3 x L <sub>m</sub>	188	7.4		<b>0.68</b>	<b>0.80</b>	<b>0.85</b>
1.5 x L <sub>m</sub>	218	8.6		<b>0.66</b>	<b>0.82</b>	<b>0.95</b>
Current size limit	178	7.0		<b>0.68</b>	<b>0.78</b>	<b>0.81</b>

#### Note:

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Parupeneus multifasciatus

#### SPR Values

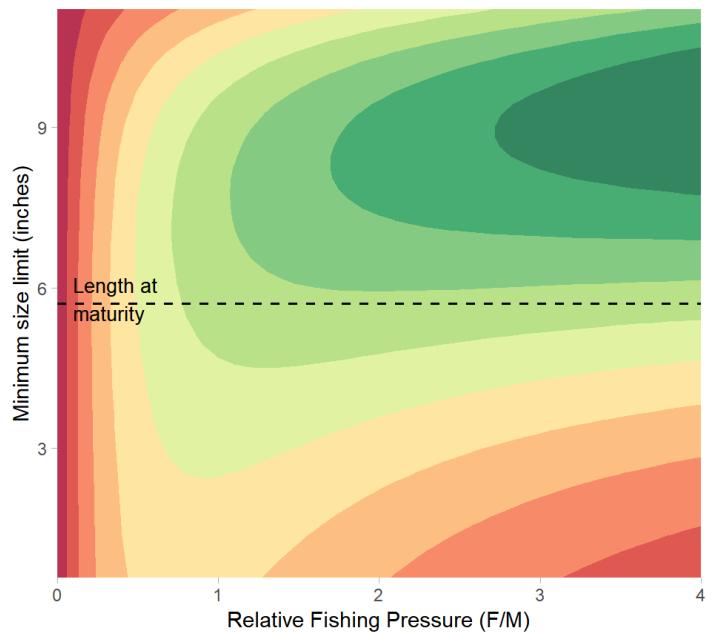


Note:

SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

### Parupeneus multifasciatus

#### YPR Values

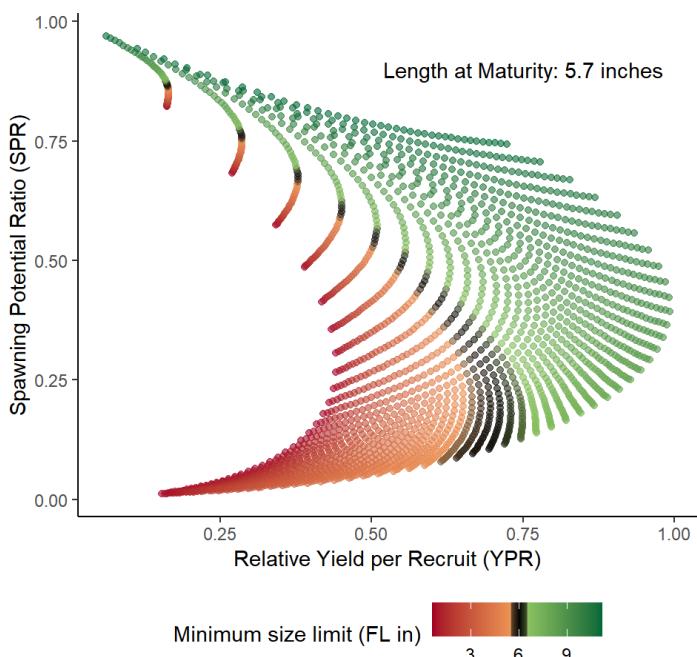


Note:

YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.

### Parupeneus multifasciatus

#### SPR-YPR tradeoffs

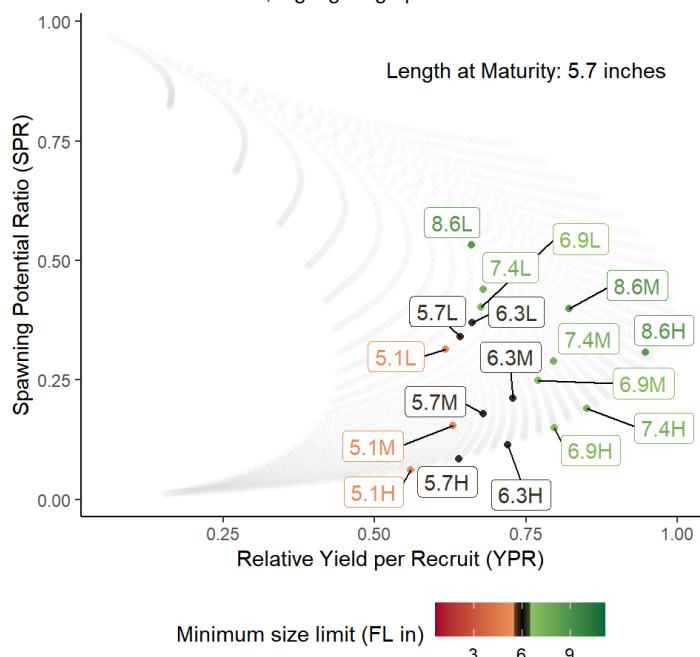


Note:

All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.

### Parupeneus multifasciatus

#### SPR-YPR tradeoffs, highlighting options from tables above.



Note:

All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

# Species: **Parupeneus porphyreus**

**Hawaiian Name:** Kumu

**Common Name:** Whitesaddle Goatfish

**Family:** Goatfishes

**Current Minimum Size Limit (FL):** 10 inches

## Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 492 mm FL

**K (von Bertalanffy growth parameter):** 0.538 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.446

**L<sub>m</sub> (Length at maturity):** 238 mm FL

**L<sub>m</sub> (Length at maturity):** 9 inches FL

**M (natural mortality rate):** 0.54 per year

**Longevity:** 6 years

**M/K:** 1

**L<sub>m</sub>/L<sub>oo</sub>:** 0.48

## Parupeneus porphyreus - SPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	214	8.4	<b>0.31</b>	<b>0.15</b>	<b>0.06</b>
1 x L <sub>m</sub>	238	9.4	<b>0.34</b>	<b>0.18</b>	<b>0.09</b>
1.1 x L <sub>m</sub>	262	10.3	<b>0.37</b>	<b>0.21</b>	<b>0.12</b>
1.2 x L <sub>m</sub>	286	11.3	<b>0.40</b>	<b>0.25</b>	<b>0.16</b>
1.3 x L <sub>m</sub>	309	12.2	<b>0.45</b>	<b>0.30</b>	<b>0.21</b>
1.5 x L <sub>m</sub>	357	14.1	<b>0.55</b>	<b>0.42</b>	<b>0.33</b>
Current size limit	254	10.0	<b>0.36</b>	<b>0.20</b>	<b>0.11</b>

*Note:*

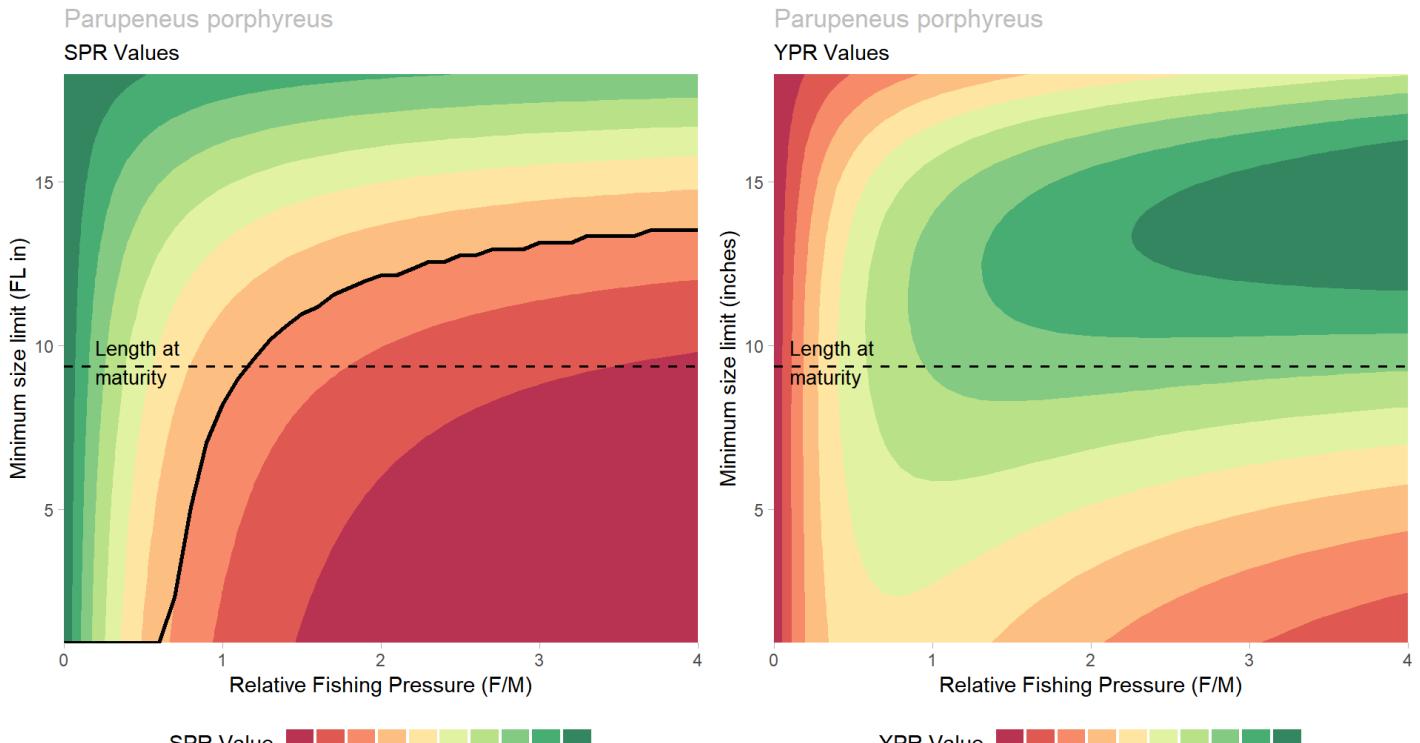
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

## Parupeneus porphyreus - YPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	214	8.4	<b>0.68</b>	<b>0.70</b>	<b>0.63</b>
1 x L <sub>m</sub>	238	9.4	<b>0.71</b>	<b>0.75</b>	<b>0.71</b>
1.1 x L <sub>m</sub>	262	10.3	<b>0.72</b>	<b>0.79</b>	<b>0.78</b>
1.2 x L <sub>m</sub>	286	11.3	<b>0.74</b>	<b>0.84</b>	<b>0.87</b>
1.3 x L <sub>m</sub>	309	12.2	<b>0.74</b>	<b>0.87</b>	<b>0.93</b>
1.5 x L <sub>m</sub>	357	14.1	<b>0.70</b>	<b>0.86</b>	<b>0.98</b>
Current size limit	254	10.0	<b>0.72</b>	<b>0.79</b>	<b>0.77</b>

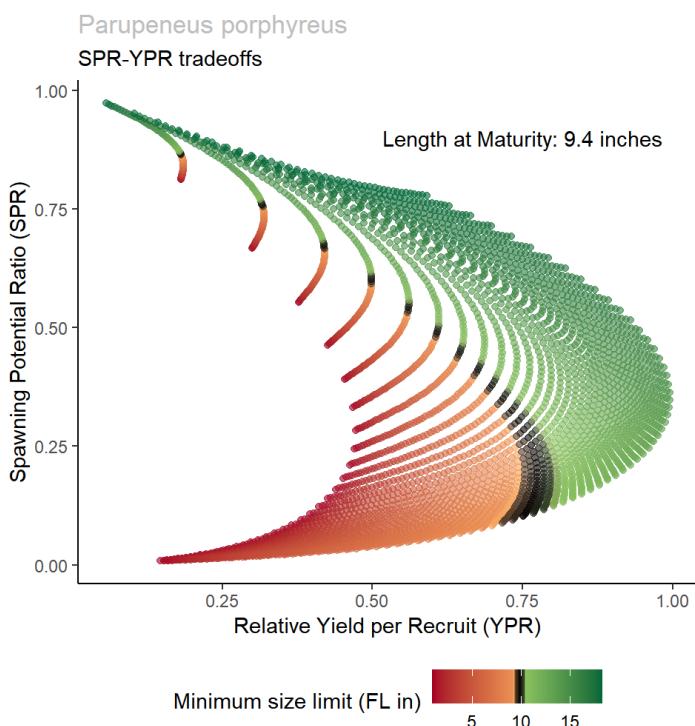
*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

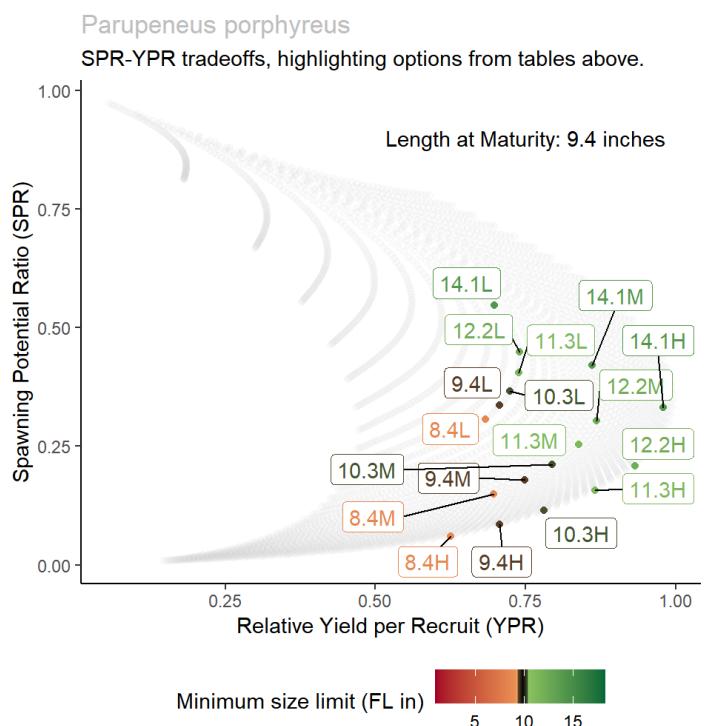


Note:  
 SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

Note:  
 YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
 All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
 All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

# Scaridae - Parrotfishes

## Species: *Chlorurus perspicillatus*

**Hawaiian Name:** Uhu-uliuli

**Common Name:** Spectacled Parrotfish

**Family:** Parrotfishes

**Current Minimum Size Limit (FL):** 12 inches

### Life History Parameters

**L<sub>0</sub> (von Bertalanffy asymptotic size):** 532 mm FL

**K (von Bertalanffy growth parameter):** 0.225 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -1.48

**L<sub>m</sub> (Length at maturity):** 350 mm FL

**L<sub>m</sub> (Length at maturity):** 14 inches FL

**M (natural mortality rate):** 0.16 per year

**Longevity:** 20 years

**M/K:** 0.71

**L<sub>m</sub>/L<sub>0</sub>:** 0.66

### *Chlorurus perspicillatus* - SPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	315	12.4	<b>0.36</b>	<b>0.19</b>	<b>0.08</b>
1 x L <sub>m</sub>	350	13.8	<b>0.40</b>	<b>0.24</b>	<b>0.13</b>
1.1 x L <sub>m</sub>	385	15.2	<b>0.46</b>	<b>0.31</b>	<b>0.20</b>
1.2 x L <sub>m</sub>	420	16.5	<b>0.54</b>	<b>0.40</b>	<b>0.31</b>
1.3 x L <sub>m</sub>	455	17.9	<b>0.64</b>	<b>0.53</b>	<b>0.44</b>
Current size limit	305	12.0	<b>0.34</b>	<b>0.17</b>	<b>0.07</b>

*Note:*

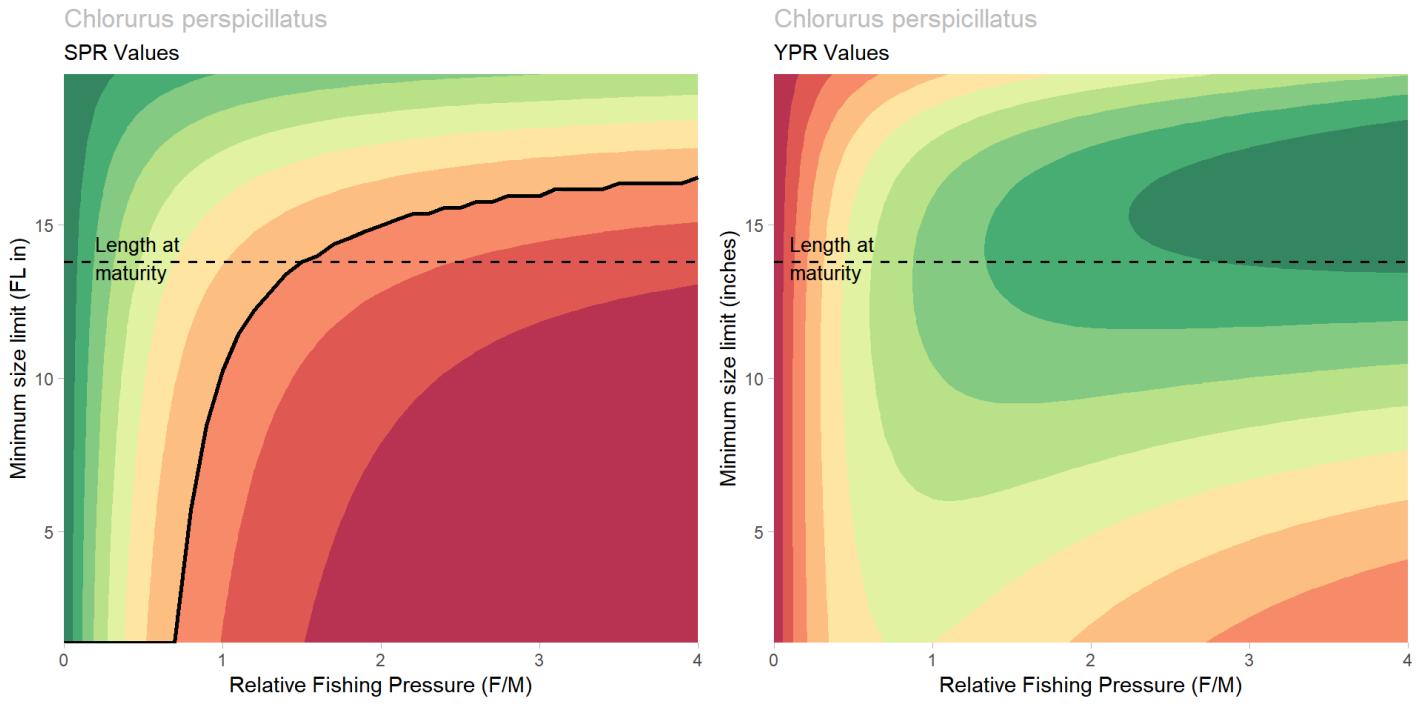
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### *Chlorurus perspicillatus* - YPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	315	12.4	<b>0.73</b>	<b>0.83</b>	<b>0.84</b>
1 x L <sub>m</sub>	350	13.8	<b>0.73</b>	<b>0.87</b>	<b>0.92</b>
1.1 x L <sub>m</sub>	385	15.2	<b>0.72</b>	<b>0.88</b>	<b>0.98</b>
1.2 x L <sub>m</sub>	420	16.5	<b>0.68</b>	<b>0.86</b>	<b>1.00</b>
1.3 x L <sub>m</sub>	455	17.9	<b>0.59</b>	<b>0.77</b>	<b>0.94</b>
Current size limit	305	12.0	<b>0.72</b>	<b>0.81</b>	<b>0.81</b>

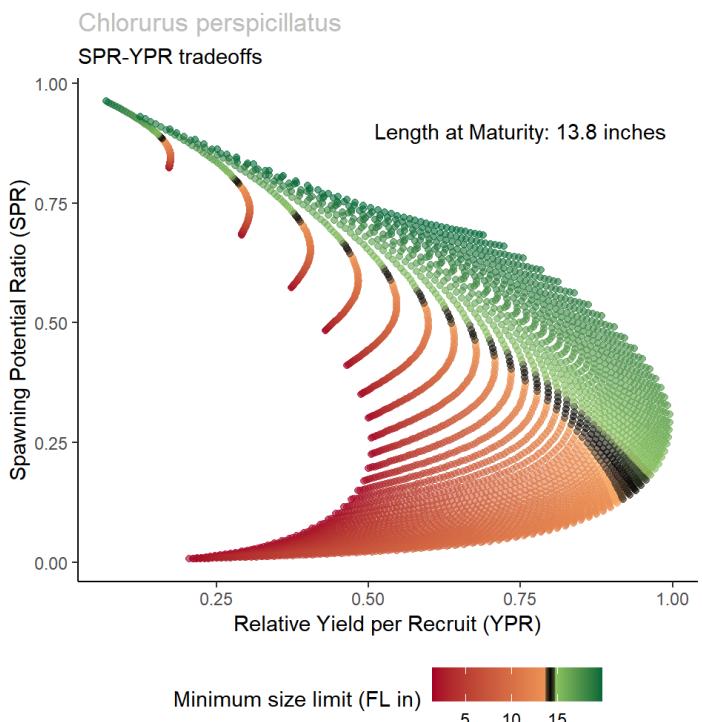
*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

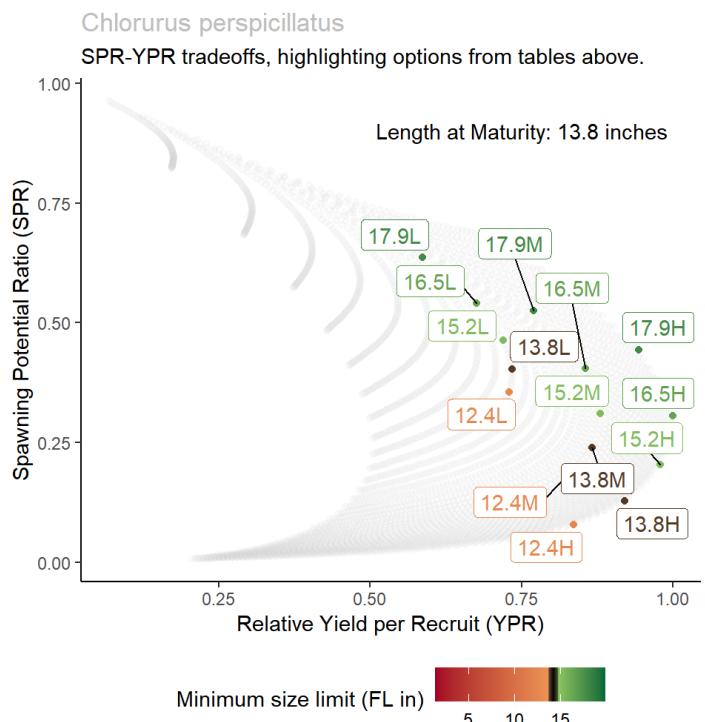


Note:  
 SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.

Note:  
 YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
 All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
 All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: ***Chlorurus sordidus***

**Hawaiian Name:** Uhu

**Common Name:** Bullethead Parrotfish

**Family:** Parrotfishes

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>0</sub> (von Bertalanffy asymptotic size):** 294 mm FL

**K (von Bertalanffy growth parameter):** 0.442 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.756

**L<sub>m</sub> (Length at maturity):** 170 mm FL

**L<sub>m</sub> (Length at maturity):** 7 inches FL

**M (natural mortality rate):** 0.32 per year

**Longevity:** 10 years

**M/K:** 0.72

**L<sub>m</sub>/L<sub>0</sub>:** 0.58

### *Chlorurus sordidus* - SPR Values

Option	Minimum Size Limit			Fishing Pressure (F/M)		
	mm	inches	Low	Med	High	
0.9 x L <sub>m</sub>	153	6.0	<b>0.35</b>	<b>0.19</b>	<b>0.08</b>	
1 x L <sub>m</sub>	170	6.7	<b>0.39</b>	<b>0.22</b>	<b>0.12</b>	
1.1 x L <sub>m</sub>	187	7.4	<b>0.43</b>	<b>0.27</b>	<b>0.16</b>	
1.2 x L <sub>m</sub>	204	8.0	<b>0.48</b>	<b>0.33</b>	<b>0.23</b>	
1.3 x L <sub>m</sub>	221	8.7	<b>0.53</b>	<b>0.40</b>	<b>0.30</b>	
1.5 x L <sub>m</sub>	255	10.0	<b>0.69</b>	<b>0.60</b>	<b>0.53</b>	

*Note:*

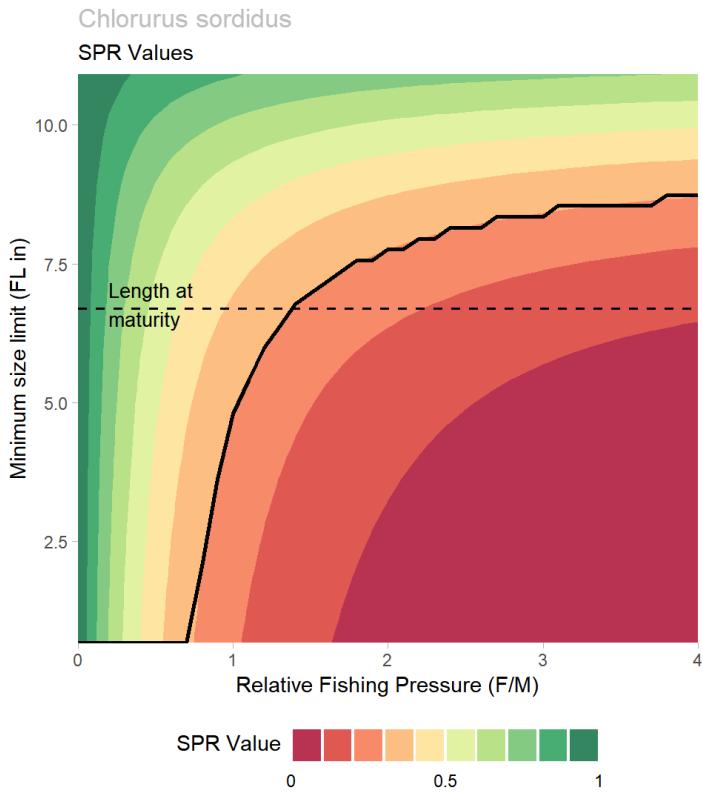
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### *Chlorurus sordidus* - YPR Values

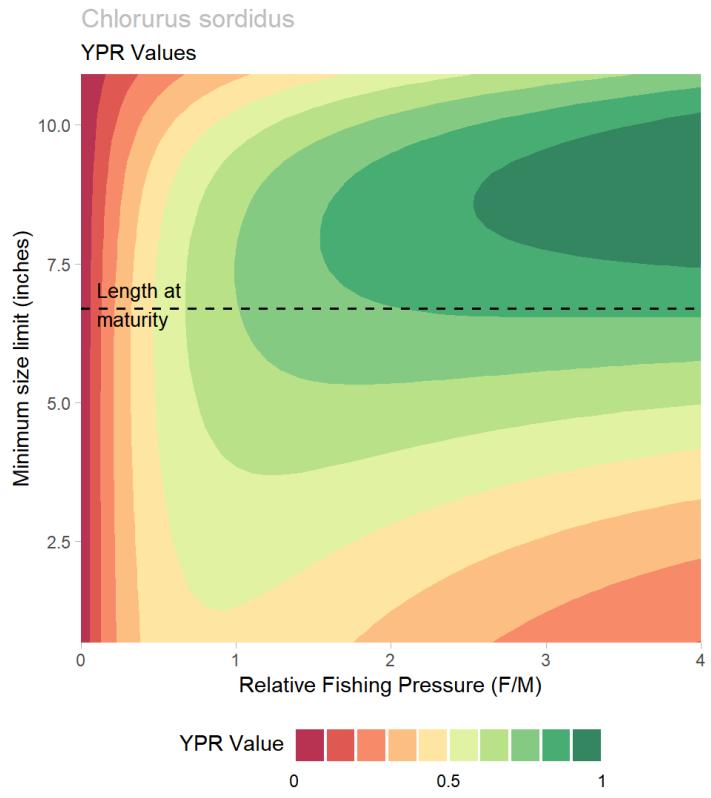
Option	Minimum Size Limit			Fishing Pressure (F/M)		
	mm	inches	Low	Med	High	
0.9 x L <sub>m</sub>	153	6.0	<b>0.68</b>	<b>0.76</b>	<b>0.75</b>	
1 x L <sub>m</sub>	170	6.7	<b>0.70</b>	<b>0.81</b>	<b>0.84</b>	
1.1 x L <sub>m</sub>	187	7.4	<b>0.70</b>	<b>0.83</b>	<b>0.89</b>	
1.2 x L <sub>m</sub>	204	8.0	<b>0.70</b>	<b>0.86</b>	<b>0.98</b>	
1.3 x L <sub>m</sub>	221	8.7	<b>0.68</b>	<b>0.86</b>	<b>1.00</b>	
1.5 x L <sub>m</sub>	255	10.0	<b>0.54</b>	<b>0.75</b>	<b>0.99</b>	

*Note:*

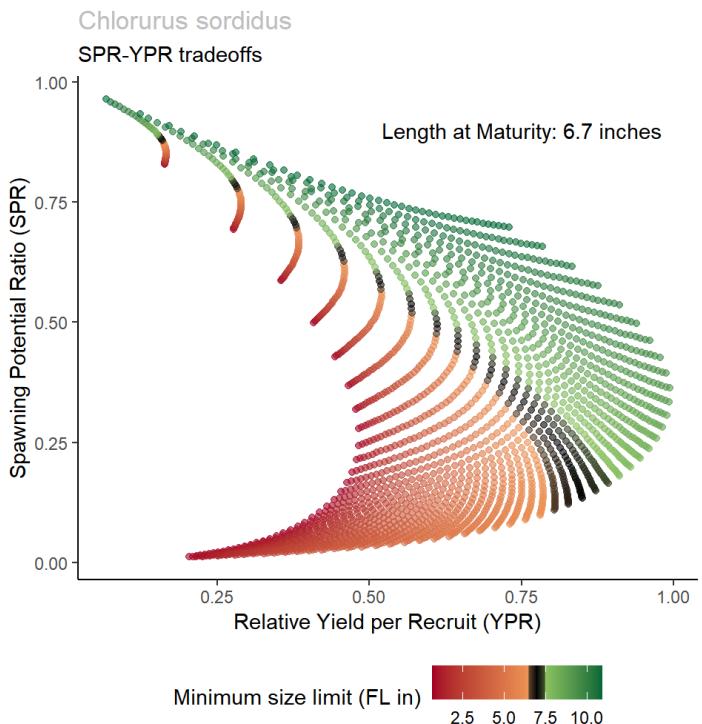
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



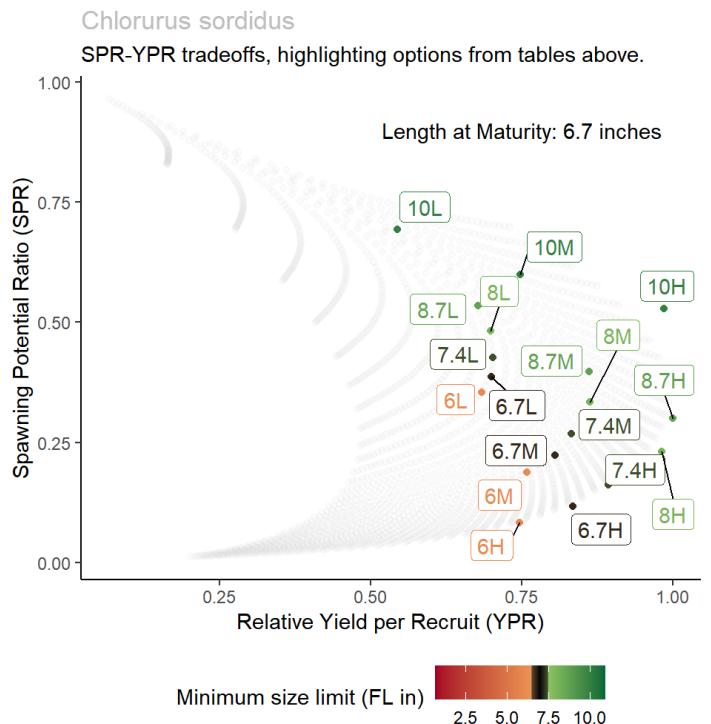
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

# Species: ***Chlorurus spilurus***

**Hawaiian Name:** Uhu

**Common Name:** Pacific Daisy Parrotfish

**Family:** Parrotfishes

**Current Minimum Size Limit (FL):** 12 inches

## Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 344 mm FL

**K (von Bertalanffy growth parameter):** 0.4 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.13

**L<sub>m</sub> (Length at maturity):** 172 mm FL

**L<sub>m</sub> (Length at maturity):** 7 inches FL

**M (natural mortality rate):** 0.29 per year

**Longevity:** 11 years

**M/K:** 0.72

**L<sub>m</sub>/L<sub>oo</sub>:** 0.5

## *Chlorurus spilurus* - SPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	155	6.1	<b>0.34</b>	<b>0.17</b>	<b>0.07</b>
1 x L <sub>m</sub>	172	6.8	<b>0.36</b>	<b>0.19</b>	<b>0.09</b>
1.1 x L <sub>m</sub>	189	7.4	<b>0.39</b>	<b>0.23</b>	<b>0.13</b>
1.2 x L <sub>m</sub>	206	8.1	<b>0.42</b>	<b>0.26</b>	<b>0.16</b>
1.3 x L <sub>m</sub>	224	8.8	<b>0.46</b>	<b>0.31</b>	<b>0.21</b>
1.5 x L <sub>m</sub>	258	10.2	<b>0.55</b>	<b>0.42</b>	<b>0.33</b>
Current size limit	305	12.0	<b>0.73</b>	<b>0.65</b>	<b>0.59</b>

*Note:*

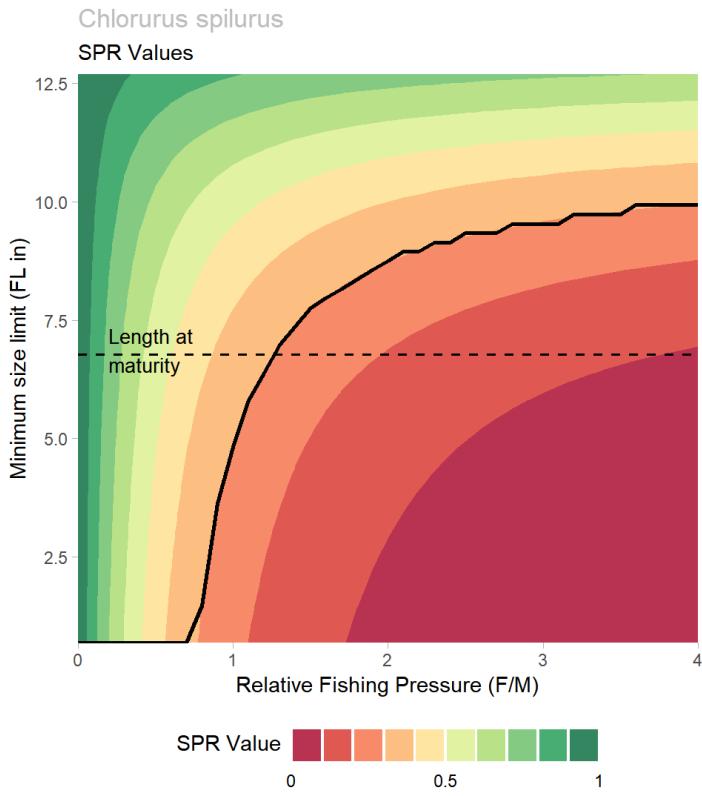
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

## *Chlorurus spilurus* - YPR Values

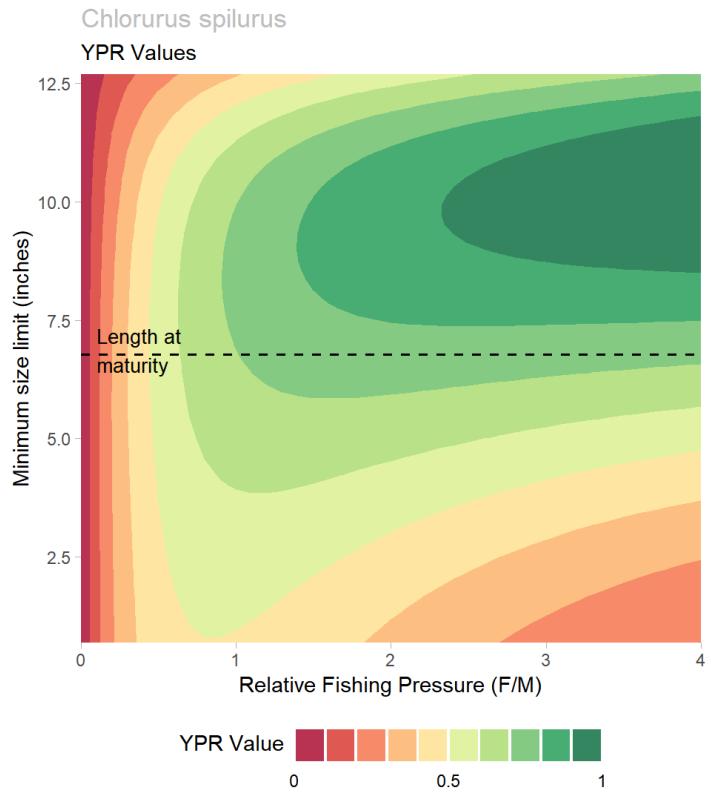
Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	155	6.1	<b>0.68</b>	<b>0.72</b>	<b>0.66</b>
1 x L <sub>m</sub>	172	6.8	<b>0.70</b>	<b>0.76</b>	<b>0.72</b>
1.1 x L <sub>m</sub>	189	7.4	<b>0.72</b>	<b>0.81</b>	<b>0.81</b>
1.2 x L <sub>m</sub>	206	8.1	<b>0.73</b>	<b>0.84</b>	<b>0.88</b>
1.3 x L <sub>m</sub>	224	8.8	<b>0.73</b>	<b>0.87</b>	<b>0.95</b>
1.5 x L <sub>m</sub>	258	10.2	<b>0.69</b>	<b>0.87</b>	<b>1.00</b>
Current size limit	305	12.0	<b>0.52</b>	<b>0.71</b>	<b>0.94</b>

*Note:*

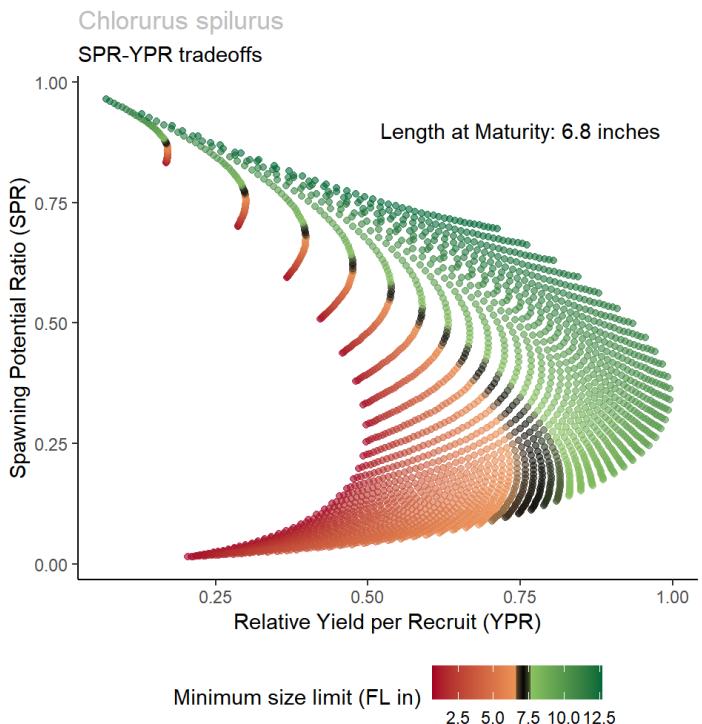
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



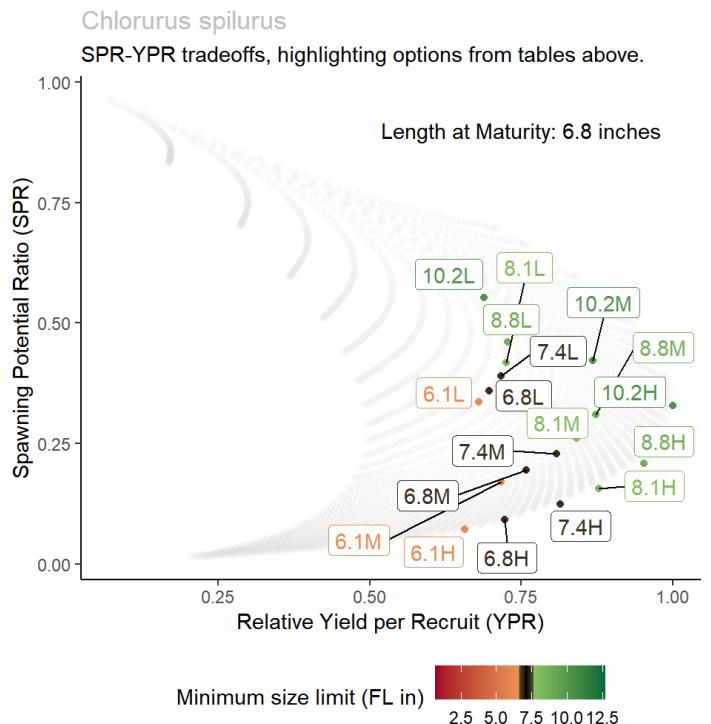
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

# Species: **Scarus psittacus**

**Hawaiian Name:** Uhu

**Common Name:** Palenose Parrotfish

**Family:** Parrotfishes

**Current Minimum Size Limit (FL):** 12 inches

## Life History Parameters

**L<sub>0</sub> (von Bertalanffy asymptotic size):** 327 mm FL

**K (von Bertalanffy growth parameter):** 0.486 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.01

**L<sub>m</sub> (Length at maturity):** 139 mm FL

**L<sub>m</sub> (Length at maturity):** 5 inches FL

**M (natural mortality rate):** 0.54 per year

**Longevity:** 6 years

**M/K:** 1.11

**L<sub>m</sub>/L<sub>0</sub>:** 0.43

## Scarus psittacus - SPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	125	4.9	<b>0.29</b>	<b>0.13</b>	<b>0.05</b>
1 x L <sub>m</sub>	139	5.5	<b>0.31</b>	<b>0.16</b>	<b>0.07</b>
1.1 x L <sub>m</sub>	153	6.0	<b>0.34</b>	<b>0.19</b>	<b>0.10</b>
1.2 x L <sub>m</sub>	167	6.6	<b>0.36</b>	<b>0.21</b>	<b>0.12</b>
1.3 x L <sub>m</sub>	181	7.1	<b>0.40</b>	<b>0.25</b>	<b>0.16</b>
1.5 x L <sub>m</sub>	208	8.2	<b>0.48</b>	<b>0.34</b>	<b>0.25</b>
2 x L <sub>m</sub>	278	10.9	<b>0.75</b>	<b>0.68</b>	<b>0.62</b>
Current size limit	305	12.0	<b>0.86</b>	<b>0.82</b>	<b>0.79</b>

*Note:*

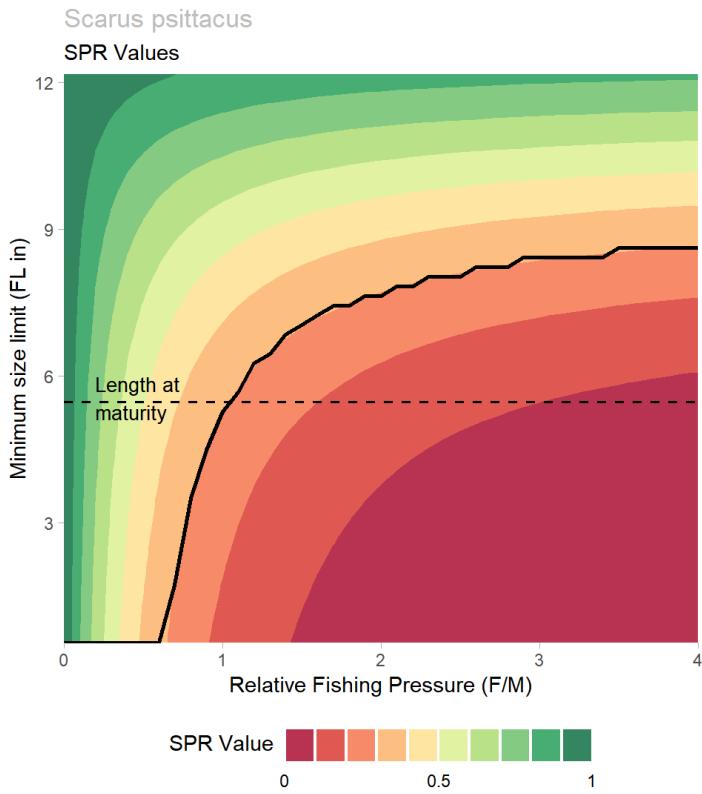
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

## Scarus psittacus - YPR Values

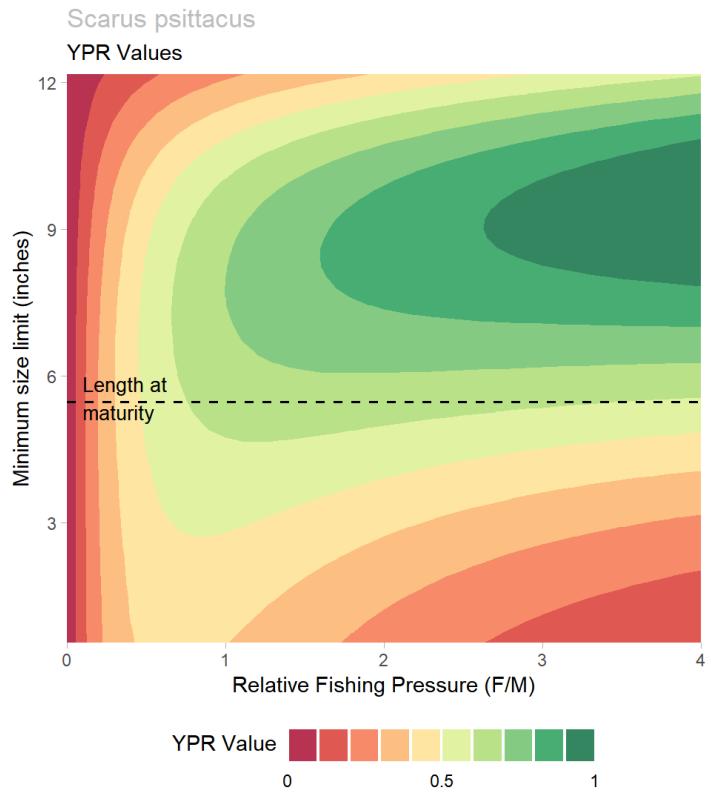
Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	125	4.9	<b>0.61</b>	<b>0.59</b>	<b>0.51</b>
1 x L <sub>m</sub>	139	5.5	<b>0.64</b>	<b>0.65</b>	<b>0.59</b>
1.1 x L <sub>m</sub>	153	6.0	<b>0.66</b>	<b>0.69</b>	<b>0.66</b>
1.2 x L <sub>m</sub>	167	6.6	<b>0.67</b>	<b>0.73</b>	<b>0.72</b>
1.3 x L <sub>m</sub>	181	7.1	<b>0.69</b>	<b>0.78</b>	<b>0.81</b>
1.5 x L <sub>m</sub>	208	8.2	<b>0.69</b>	<b>0.83</b>	<b>0.91</b>
2 x L <sub>m</sub>	278	10.9	<b>0.47</b>	<b>0.64</b>	<b>0.83</b>
Current size limit	305	12.0	<b>0.32</b>	<b>0.46</b>	<b>0.65</b>

*Note:*

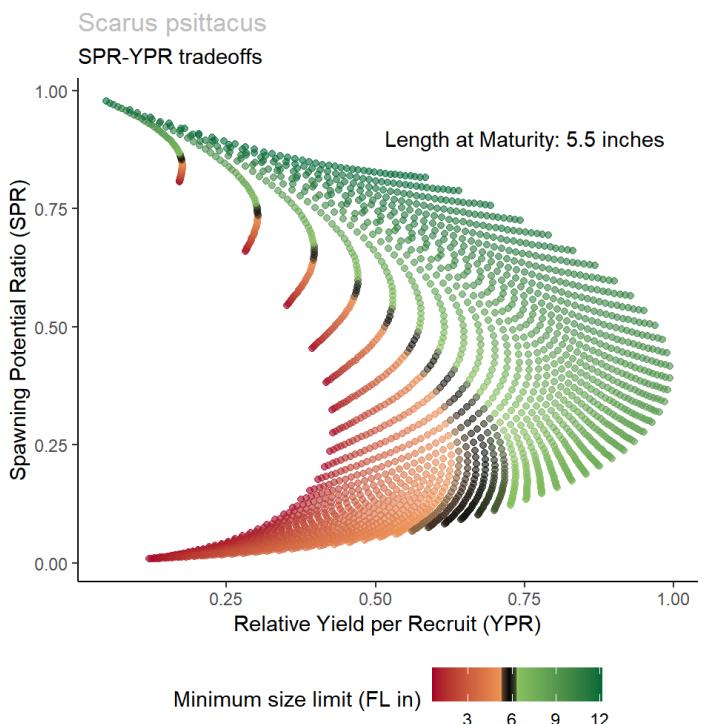
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



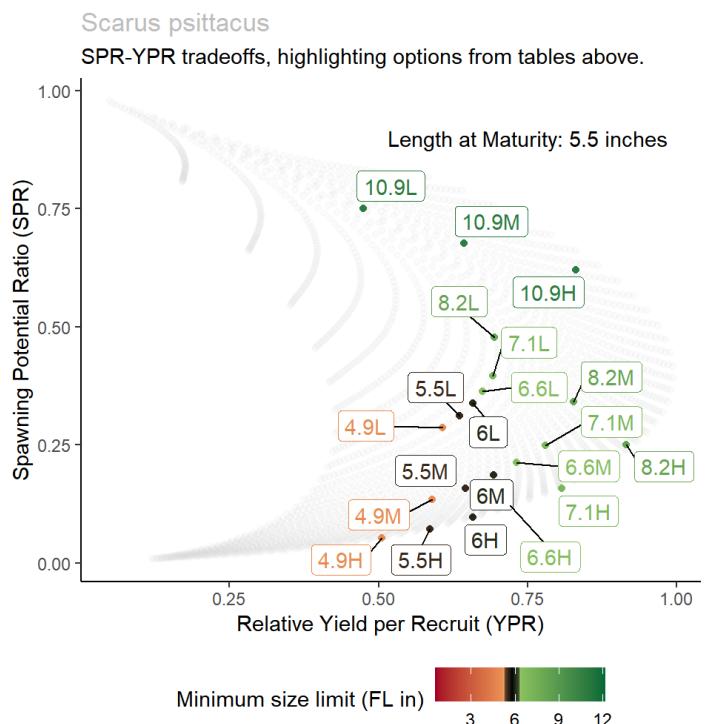
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

## Species: **Scarus rubroviolaceus**

**Hawaiian Name:** Uhu palukaluka

**Common Name:** Redlip Parrotfish

**Family:** Parrotfishes

**Current Minimum Size Limit (FL):** 12 inches

### Life History Parameters

**L<sub>0</sub> (von Bertalanffy asymptotic size):** 535 mm FL

**K (von Bertalanffy growth parameter):** 0.41 per year

**t<sub>0</sub> (von Bertalanffy parameter):** 0.12

**L<sub>m</sub> (Length at maturity):** 350 mm FL

**L<sub>m</sub> (Length at maturity):** 14 inches FL

**M (natural mortality rate):** 0.16 per year

**Longevity:** 20 years

**M/K:** 0.39

**L<sub>m</sub>/L<sub>0</sub>:** 0.65

### Scarus rubroviolaceus - SPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	315	12.4	<b>0.39</b>	<b>0.21</b>	<b>0.10</b>
1 x L <sub>m</sub>	350	13.8	<b>0.42</b>	<b>0.25</b>	<b>0.13</b>
1.1 x L <sub>m</sub>	385	15.2	<b>0.45</b>	<b>0.29</b>	<b>0.17</b>
1.2 x L <sub>m</sub>	420	16.5	<b>0.50</b>	<b>0.35</b>	<b>0.23</b>
1.3 x L <sub>m</sub>	455	17.9	<b>0.57</b>	<b>0.43</b>	<b>0.33</b>
Current size limit	305	12.0	<b>0.38</b>	<b>0.21</b>	<b>0.09</b>

*Note:*

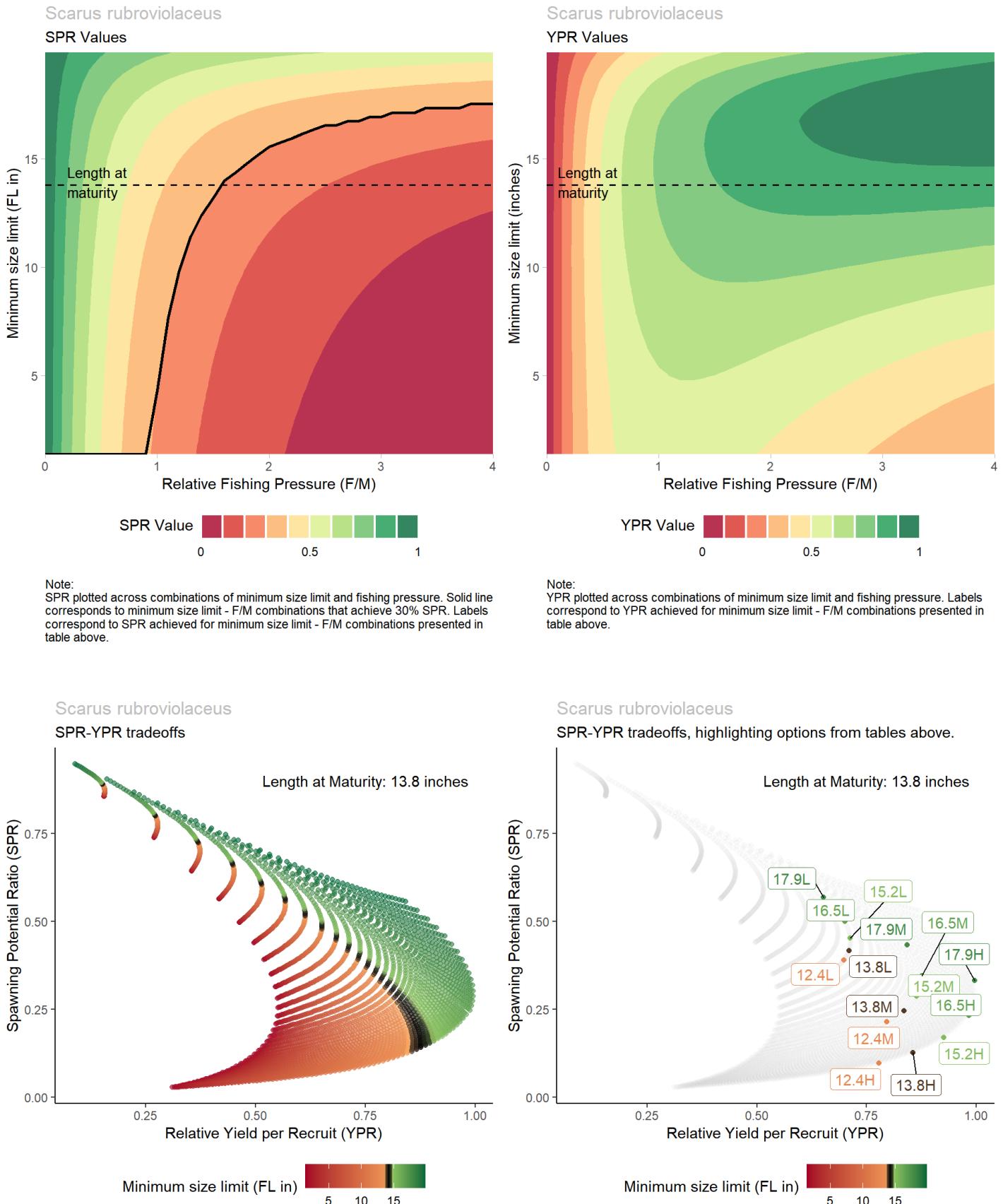
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Scarus rubroviolaceus - YPR Values

Option	mm	inches	Fishing Pressure (F/M)		
			Low	Med	High
0.9 x L <sub>m</sub>	315	12.4	<b>0.70</b>	<b>0.80</b>	<b>0.78</b>
1 x L <sub>m</sub>	350	13.8	<b>0.71</b>	<b>0.83</b>	<b>0.86</b>
1.1 x L <sub>m</sub>	385	15.2	<b>0.71</b>	<b>0.86</b>	<b>0.93</b>
1.2 x L <sub>m</sub>	420	16.5	<b>0.70</b>	<b>0.88</b>	<b>0.98</b>
1.3 x L <sub>m</sub>	455	17.9	<b>0.65</b>	<b>0.84</b>	<b>1.00</b>
Current size limit	305	12.0	<b>0.69</b>	<b>0.78</b>	<b>0.76</b>

*Note:*

Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.

Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

# Serranidae - Sea basses

## Species: *Cephalopholis argus*

**Hawaiian Name:** Roi

**Common Name:** Peacock Grouper

**Family:** Sea basses

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 506 mm FL

**K (von Bertalanffy growth parameter):** 0.075 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -6.5

**L<sub>m</sub> (Length at maturity):** 268 mm FL

**L<sub>m</sub> (Length at maturity):** 11 inches FL

**M (natural mortality rate):** 0.13 per year

**Longevity:** 25 years

**M/K:** 1.73

**L<sub>m</sub>/L<sub>oo</sub>:** 0.53

### *Cephalopholis argus* - SPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	241	9.5	<b>0.30</b>	<b>0.15</b>	<b>0.06</b>
1 x L <sub>m</sub>	268	10.6	<b>0.37</b>	<b>0.22</b>	<b>0.12</b>
1.1 x L <sub>m</sub>	295	11.6	<b>0.44</b>	<b>0.29</b>	<b>0.20</b>
1.2 x L <sub>m</sub>	322	12.7	<b>0.51</b>	<b>0.38</b>	<b>0.29</b>
1.3 x L <sub>m</sub>	348	13.7	<b>0.60</b>	<b>0.49</b>	<b>0.41</b>
1.5 x L <sub>m</sub>	402	15.8	<b>0.75</b>	<b>0.68</b>	<b>0.63</b>

*Note:*

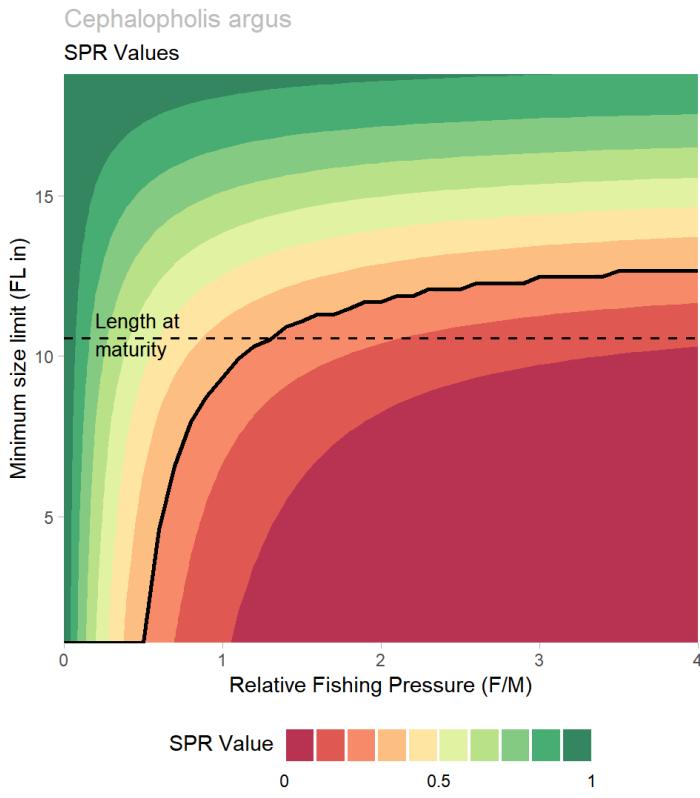
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### *Cephalopholis argus* - YPR Values

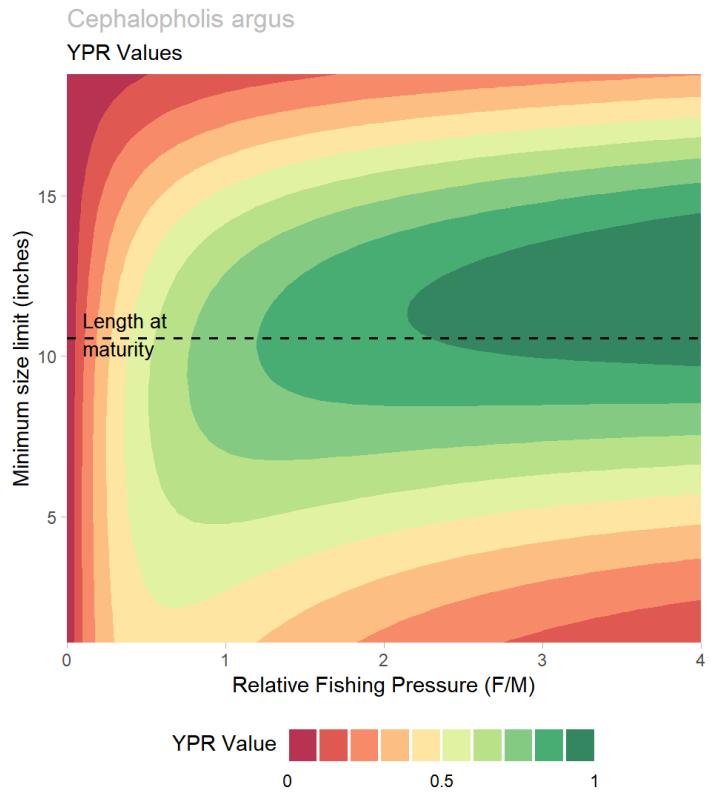
Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	241	9.5	<b>0.76</b>	<b>0.86</b>	<b>0.89</b>
1 x L <sub>m</sub>	268	10.6	<b>0.76</b>	<b>0.88</b>	<b>0.95</b>
1.1 x L <sub>m</sub>	295	11.6	<b>0.74</b>	<b>0.89</b>	<b>1.00</b>
1.2 x L <sub>m</sub>	322	12.7	<b>0.69</b>	<b>0.85</b>	<b>0.99</b>
1.3 x L <sub>m</sub>	348	13.7	<b>0.62</b>	<b>0.79</b>	<b>0.94</b>
1.5 x L <sub>m</sub>	402	15.8	<b>0.44</b>	<b>0.58</b>	<b>0.73</b>

*Note:*

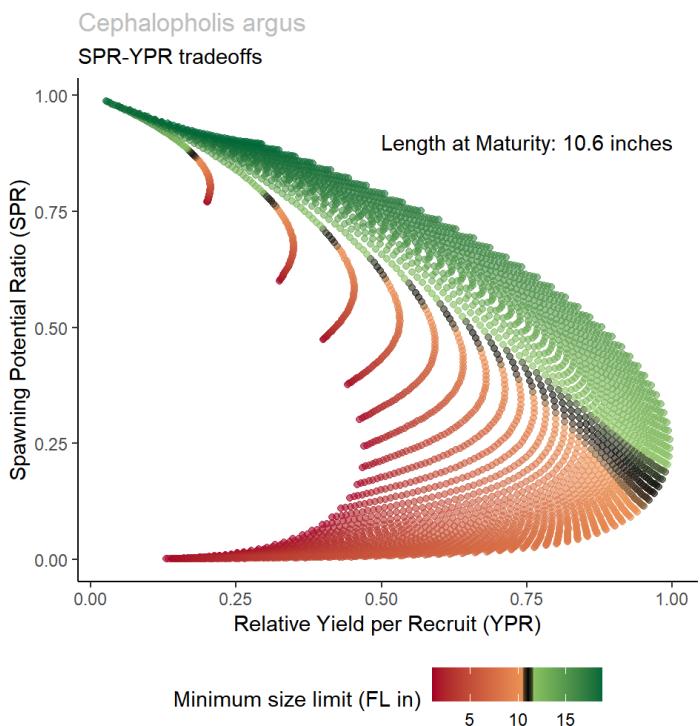
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



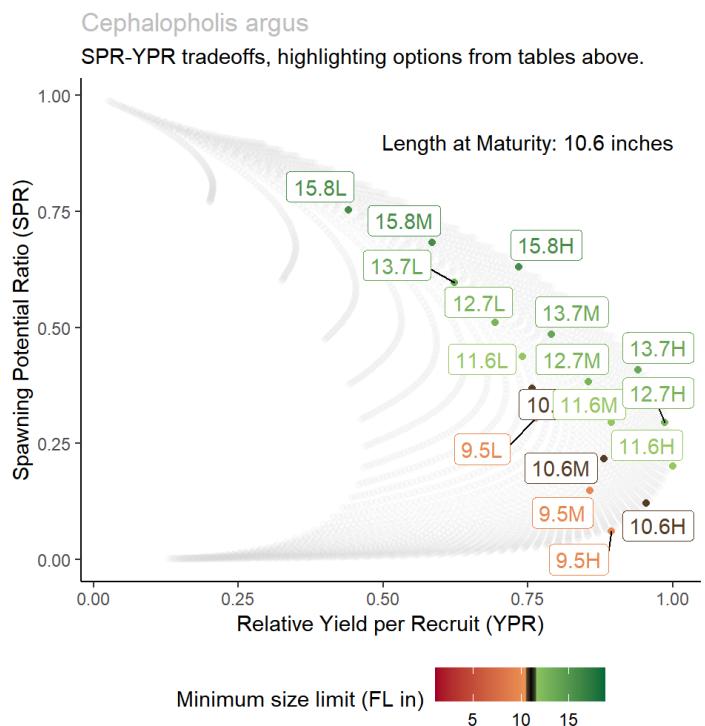
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).

# Sphyraenidae - Barracudas

## Species: Sphyraena barracuda

**Hawaiian Name:** Kaku

**Common Name:** Great Barracuda

**Family:** Barracudas

**Current Minimum Size Limit (FL):** NA

### Life History Parameters

**L<sub>oo</sub> (von Bertalanffy asymptotic size):** 1236 mm FL

**K (von Bertalanffy growth parameter):** 0.26 per year

**t<sub>0</sub> (von Bertalanffy parameter):** -0.71

**L<sub>m</sub> (Length at maturity):** 780 mm FL

**L<sub>m</sub> (Length at maturity):** 31 inches FL

**M (natural mortality rate):** 0.17 per year

**Longevity:** 19 years

**M/K:** 0.65

**L<sub>m</sub>/L<sub>oo</sub>:** 0.63

### Sphyraena barracuda - SPR Values

Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	702	27.6	<b>0.36</b>	<b>0.19</b>	<b>0.08</b>
1 x L <sub>m</sub>	780	30.7	<b>0.40</b>	<b>0.23</b>	<b>0.12</b>
1.1 x L <sub>m</sub>	858	33.8	<b>0.44</b>	<b>0.29</b>	<b>0.18</b>
1.2 x L <sub>m</sub>	936	36.9	<b>0.50</b>	<b>0.36</b>	<b>0.25</b>
1.3 x L <sub>m</sub>	1014	39.9	<b>0.58</b>	<b>0.45</b>	<b>0.36</b>
1.5 x L <sub>m</sub>	1170	46.1	<b>0.78</b>	<b>0.71</b>	<b>0.65</b>

*Note:*

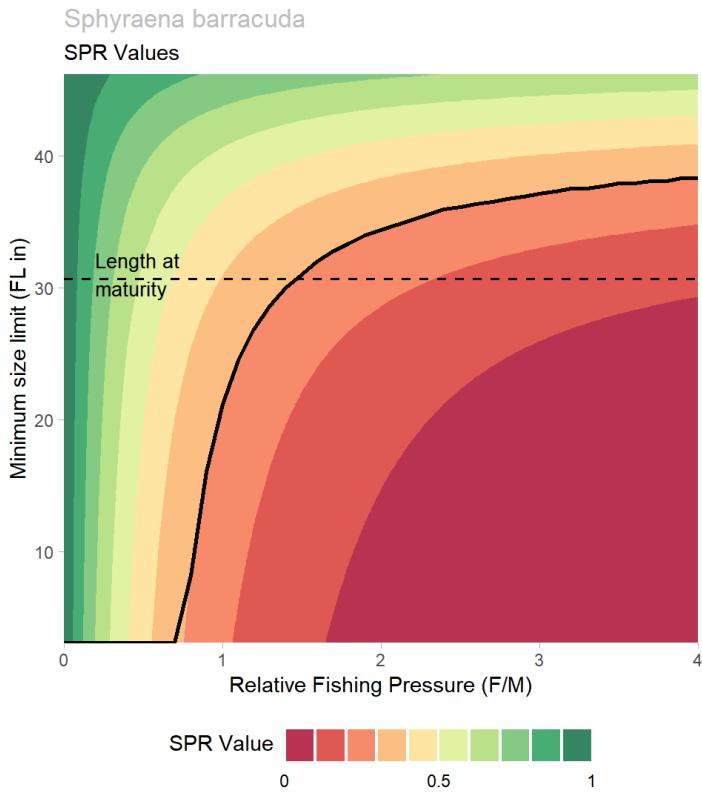
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.

### Sphyraena barracuda - YPR Values

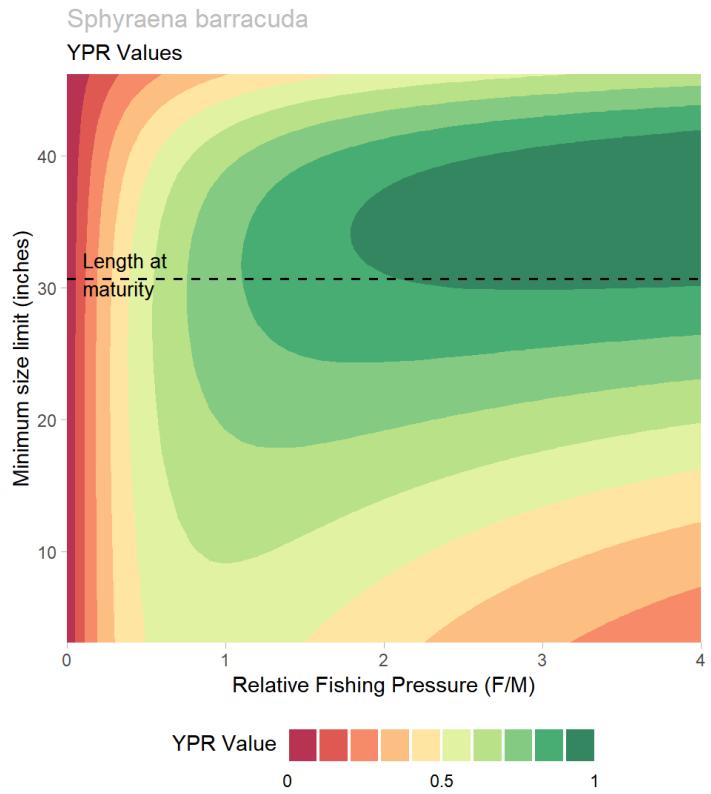
Minimum Size Limit			Fishing Pressure (F/M)		
Option	mm	inches	Low	Med	High
0.9 x L <sub>m</sub>	702	27.6	<b>0.77</b>	<b>0.85</b>	<b>0.83</b>
1 x L <sub>m</sub>	780	30.7	<b>0.78</b>	<b>0.90</b>	<b>0.92</b>
1.1 x L <sub>m</sub>	858	33.8	<b>0.77</b>	<b>0.92</b>	<b>0.97</b>
1.2 x L <sub>m</sub>	936	36.9	<b>0.74</b>	<b>0.91</b>	<b>1.00</b>
1.3 x L <sub>m</sub>	1014	39.9	<b>0.68</b>	<b>0.85</b>	<b>0.98</b>
1.5 x L <sub>m</sub>	1170	46.1	<b>0.41</b>	<b>0.54</b>	<b>0.67</b>

*Note:*

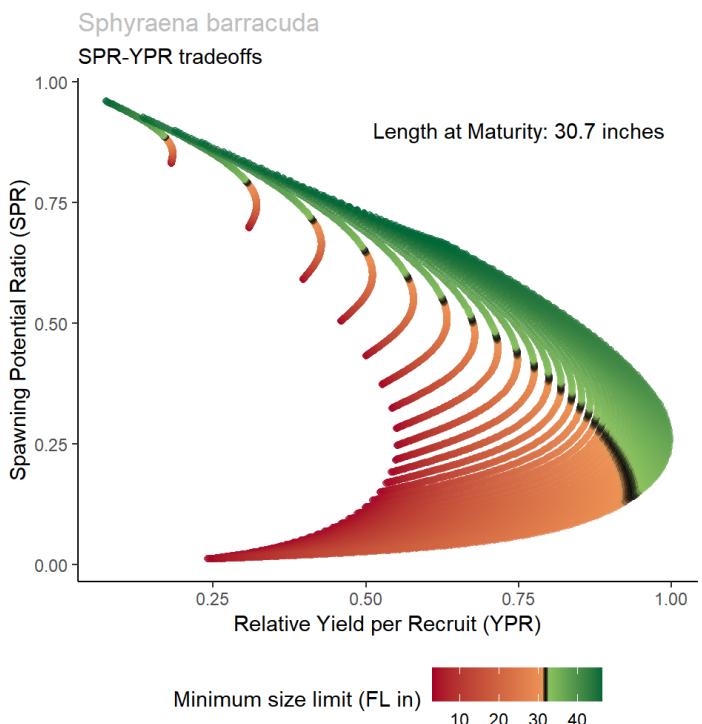
Option refers to minimum size limit specified as a multiple of length at maturity (L<sub>m</sub>). Current size limit (where applicable) is current DAR regulation.



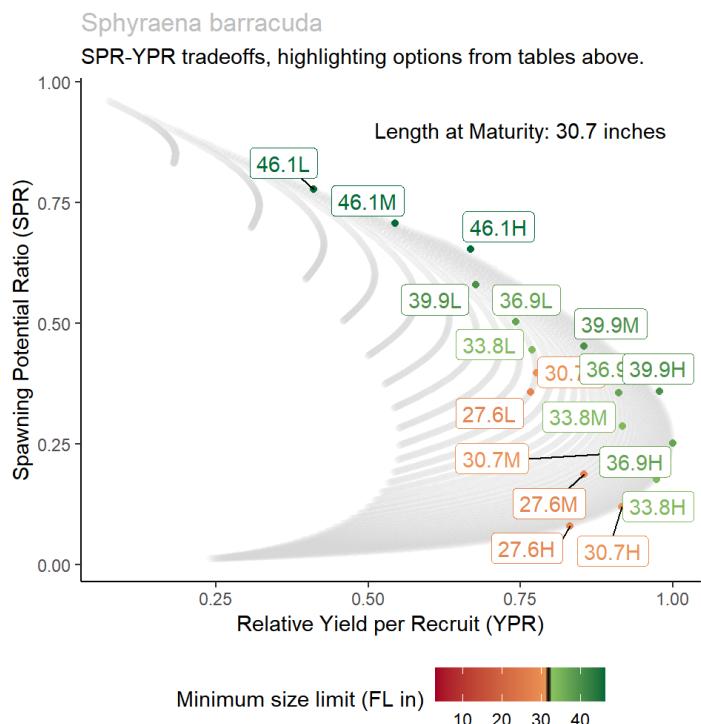
Note:  
SPR plotted across combinations of minimum size limit and fishing pressure. Solid line corresponds to minimum size limit - F/M combinations that achieve 30% SPR. Labels correspond to SPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
YPR plotted across combinations of minimum size limit and fishing pressure. Labels correspond to YPR achieved for minimum size limit - F/M combinations presented in table above.



Note:  
All size limit and fishing pressure combinations plotted. Color gradient indicates minimum size limit, with black points corresponding to minimum size limit set equal to species' length at maturity. Green points are minimum size limits greater than species length at maturity.



Note:  
All size limit and fishing pressure combinations plotted in light grey. Labels contain information on combination of minimum size limit in inches (numbers) and fishing pressure (letters: L = low, M = medium, H = high).